出國報告（出國類別：其他）

2018 年「國際衛星輔助搜救組織」（COSPAS-SARSAT）第 59 屆理事會會議報告

服務機關：行政院農業委員會漁業署

姓名職稱：劉家禎、邱宜賢

派赴國家：加拿大

出國期間：107 年 2 月 5 日至 8 日

報告日期：107 年 3 月 31 日

2018 年「國際衛星輔助搜救組織」（COSPAS-SARSAT）

第 59 屆理事會會議報告

目次

壹、目的

國際衛星輔助搜救組織(COSPAS-SARSAT)為公益性的國際搜救組織，於1988年由美國、俄羅斯、法國及加拿大4國合作與倡導下，在加拿大蒙特婁(Montréal, Québec, Canada.)成立，目前計有44個成員，包括4個創始國、29個地面設施提供者（Ground Segment Provider）、9個使用者及2個地面設施運作者（Ground Segment Operater）。我國於1990年在夏威夷召開「太平洋地區使用者會議」時透過日本代表之推薦出席會議，為確保臺灣海峽附近海域海上之安全，期能善盡國際義務加入該組織提供國際衛星搜索救助服務。並於1992年獲允我國以電信總局國際電信開發公司（International Telecommunication Development Cooperation,簡稱ITDC）名義參與該組織之運作至今，主要角色為地面設施供應者。

本次會議係第59屆理事會，於本2018年2月5日至8日在加拿大蒙特婁舉辦，按理事會係每年定期召開，邀請各會員國派遣代表與會，討論國際衛星輔助搜救系統之相關事項，本屆理事會討論議題焦點為太空設施（Space Segment）、地面設施（Ground Segment）、示標議題（Beacon Matters）、系統運作（System Operation）及中軌道衛星搜救系統（MEOSAR SYSTEM）。

貳、過程

一、出席會議單位

本次會議係由俄羅斯代表Mr. Andrey Kuropyatnikov擔任主席，共計有超過30個會員國(全球現有44個會員國）代表出席（Algeria、Argentina、Australia、Brazil、Canada、Chile、China (P.R. of)、Cyprus、Denmark、Finland、France、Greece、Hong Kong, China、Indonesia、Italy、ITDC、Japan、

Korea (Rep. of)、Netherlands、New Zealand、Norway、Peru、Russian Federation、Saudi Arabia、Singapore、South Africa、Spain、Sweden、Switzerland、Thailand、Turkey、United Arab Emirates、United Kingdom、United States of America、Vietnam）與會，並計有歐盟(EC)、國際民航組織（ICAO）、國際行動衛星組織（IMSO）及海上無線電技術委員會（RTCM）以觀察員身份參與，另三大搜救衛星廠商（Honeywell、McMurdo、Galileo）亦派員與會。

我國由中華電信公司沈永杰協理擔任團長，團員包括交通部、交通部航港局、外交部、行政院農業委員會漁業署及國立臺灣海洋大學人員，此次會議之我國代表及各國出席人員如附件 1。

二、議程

本次會議議程自 2018 年 2 月 5 日至 8 日於加拿大蒙特婁國際民用航空組織總部（International Civil Aviation Organization，簡稱 ICAO）召開，如圖 1 所示。

「國際衛星輔助搜救組織」(Cospas-Sarsat）第 59 屆理事會會議

Date	2/3(星期六)	2/4(星期日)	2/5(星期一)	2/6(星期二)	2/7(星期三)	2/8(星期四)	2/9(星期五)	2/10(星期六)	2/11(星期日)
預計行程	台北 1940 出發→多倫多 2030 到達 多倫多 2310 出發→	蒙特婁 0023 到達	第 59 屆「國際衛星輔助搜救組織」(Cospas-Sarsat）理事會會議，日期:2018 年 2 月 5 日至 8 日，地點: Montréal, Québec, Canada.				蒙特婁 2100 出發→多倫多 2224 到達	多倫多 0045 出發	0525 抵達台灣

圖 1、「國際衛星輔助搜救組織」（COSPAS-SARSAT）第 59 屆理事會會議行程。

本次會議除由俄羅斯代表 Mr. Andrey Kuropyatnikov 擔任主席綜理會議進行外，另由大會秘書長 Mr. Steven Lett 報告會議議程，經理事會決議通過本次會議議程如附件 2，本屆理事會討論議題焦點為太空設施（Space Segment）、地面設施（Ground Segment）、示標議題（Beacon Matters）、

系統運作（System Operation）及中軌道衛星搜救系統（MEOSAR SYSTEM），討論議題項目摘要如下：

（一）COSPAS-SARSAT 計畫現況

（二）第 31 次聯委會（Joint Committee）會議報告

（三）太空設施（Space Segment）、地面設施（Ground Segment）、示標議題（Beacon Matters）、系統運作（System Operation）

（四）中軌道搜救衛星系統（Medium-altitude Earth Orbit Search and Rescue System,簡稱 MEOSAR）演進

（五）與國際組織聯繫((Liaison With International Organizations)

（六）下次會議時間、地點、主席、議程及職權(Future COSPAS-SARSAT Meetings-Dates, Venues, Chairpersons and Agenda/Terms of Reference)

（七）審定議決紀錄(Approval of Summary Record)

三、重要討論決議事項

（一）COSPAS-SARSAT 計畫現況

1、目前計有 44 個成員，包括 4 個創始國、29 個地面設施提供者（Ground Segment Provider）、9 個使用者及 2 個地面設施運作者（Ground Segment Operater）。

2、自 2016 年 12 月舉行第 57 次會議以來，計有我國、阿根廷、智利、賽普勒斯、德國、馬來西亞、荷蘭、

秘魯、西班牙、瑞典、土耳其、英國與越南，計13個成員向秘書處更新代表人名稱。

3、丹麥使用者已可向政府進行註冊登記個人指位無線電示標(Personal Locator Beacon, 以下簡稱PLB)合法使用，但目前仍少於10個使用者。

4、RTCM希望在2018年3月完成更新PLB的標準，並包含兩種定位選項，以證明RTCM對COSPAS-SARSAT計畫與406MHz電示標的持續支持。

（二）第31次聯委會會議報告

1、本次會議主席為加拿大Michael Donald先生，OWG-31主席為美國Mr. Allan Knox先生，TWG-31主席為法國Yoan Gregoire先生。

2、建議理事會邀請中國大陸為關於北斗衛星（BDS）在與歐洲伽利略系統頻率協調部分進行討論，並經決定由理事會要求秘書處撰擬信件邀請中國大陸為COSPAS-SARSAT的MEOSAR做出貢獻。

3、理事會決定同意位在阿聯酋阿布札比的GEOLUT（4707）進入COSPAS-SARSAT系統。

（三）太空設施（Space Segment）、地面設施（Ground Segment）、示標議

題（Beacon Matters）、系統運作（System Operation）

1、批准挪威與澳洲新的任務管制中心（Mission Control Center,MCC）投入 COSPAS-SARSAT 系統運作。

2、要求秘書處調查無線電示標製造商在 2016 年生產 406-MHz 示標的調查摘要報告，並在 2018 年進行示標製造商於 2017 年製作 406-MHz 示標的調查，並向理事會報告調查結果。

3、理事會請法國、美國及相關地面設施提供者辦理下列事項：

(1) 持續監控每個頻道流量，並在未來聯委會(Joint Committee）中提出報告。

(2) 監控現行已運作之無線電示標以自我測試模式（self-test mode）分別傳至繞極軌道衛星（LEOSAR）與同步軌道衛星（GEOSAR）之訊號差異。

4、請地面設施提供者落實 Return Link Service (RLS) 更新，所有任務管制中心（MCC）應在 2018 年 12 月完成;並請各會員確定 RLS 註冊示標的執行機制。

5、理事會決定邀請參與成員評估其 MCC 中，過濾 European Reference Beacons(REFBEs) RLS 測試傳輸的實施情況，並在第 32 次聯委會（JC-32）報告結論。

6、歐盟伽利略計畫已成功啟動 4 顆衛星，在 2018 年第一季與第二季季行測試，將於 2018 年 7 月投入使用，並於 2018 年 10 月的 JC-32 會議提交報告。

7、日本目前所使用的是 4 個通道的 MEOLUT，將再進一步增加至 6 個通道。另外，日本將在那霸距離 MEOLUT 約 1,500 公里處，設立 MEOSAR 的參考示標，頻率為 406.034MHz。

8、歐盟與中國大陸於會議共同提報北斗衛星與伽利略衛星系統 overlapping 而產生定位誤差問題報告，會中建議建立緊急聯繫專家小組及訂定規範，以設法盡速解決此問題。中國大陸就與伽利略系統頻率相同，產生干擾問題，願意在 2018 年 3 月或 4 月參與工作小組會議，以討論 MEOSAR 頻率管理事務，並計畫在 2020 年前發射 6 顆提供 SAR 的北斗衛星。

9、英國與海上無線電技術委員會（RTCM）共同提報個人指位電示標（Personal Location Beacon，PLB）運用於海上之情況，英國並於會中說明已要求其漁船救生衣應配有 PLB，鑒於 PLB 在海上使用愈來愈頻繁，理事會決定請英國、RTCM 及相關成員於第 32 屆聯委會進一步提現況報告，並在 IMO 轄下航行通訊與搜救次委員會（NCSR）中提出討論。另經會後查詢英國政府網站，英國係自歐盟漁業委員會等組織，取得經費預算購置含有 PLB 的救生衣，提供漁民更安全的海上作業條件。

（四）中軌道搜救衛星系統（Medium-altitude Earth Orbit Search and Rescue

System,簡稱 MEOSAR）演進

1、自動報告系統（QARS）應由節點 MCC 評估，盡快在 COSPAS-SARSAT 網站上顯示 MEOSAR QMS 狀態。

2、建議在 2018 年秘書處預算中撥出 5,000 加元的預算，用於一個或兩個志願節點的 MCC，進行設置 FTP-over-VPN 測試連接，並於 2018 年底，由澳大利亞與西班牙自願參加測試。

（五）與國際組織聯繫

1、在 2018 年 9 月將提交 EPIRB 的岸台維護與年度測試指南予國際海事組織（IMO）及 ITU，並透過電子郵件（Edwin.B.Thiedeman@uscg.mil）邀請美國審閱報告。

2、更新 IMO 對於 EPIRB 的功能標準，以利 AIS 使用訊息 14 傳輸 406MHz 的示標號碼，並邀請會員參與 IMO、ITU、ICAO、NCSR 工作小組會議，審查關於在 EPIRB 以 AIS 定位的方式，並鼓勵在 2018 年的以國家或國際標準進行認證許可。

3、回應 NCSR 要求，對 GMDSS 遇險警報進行分析。

（六）下次會議時間、地點、主席、議程及職權

1、理事會決定下次會議主席由美國 Mr. Christopher O'Connors 擔任，副主席由加拿大 Mr. Michael Donald 擔任。JC-32 會議及 2019 年理事會將於加拿大蒙特婁舉行。

2、理事會決定邀請英國、RTCM 與其他有興趣會員，就未來召開 JC-32 會議討論 MEOSAR 優先事項，英國並已表示將與 IMO 進行會議討論。

3、理事會決定召開專家工作小組會議，由美國 Jesse Reich 先生擔任主席。

4、理事會批准 2018 年及 2019 年初會議時程，列於附件 19。

（八）審定議決紀錄

1、理事會於 2018 年 2 月 8 日批准第 59 屆會議紀錄。

2、理事會邀請會員參與 2018 年 7 月 1 日，在巴黎舉行的國際衛星輔助搜救組織 COSPAS-SARSAT 三十周年協議簽署紀念活動。

3、理事會感謝本次會議主席 Mr. Andrey Kuropyatnikov 的努力貢獻，讓會議順利圓滿完成。

四、與我國有關會議事項

(一) 2.3.18 ITDC

ITDC 有兩個 LEOLUTs 及 一個 MCC 運作中，並由

Tian-Tsair Su 於 2018 年 1 月 1 日起擔任 ITDC 負責人。

(二) 3.3.2

確認 2018 年起開始實施地面部分修訂內容。

(三) 4.2.16

迫切需要升級所有的 MCC，並預計於 2018 年 6 月前完成各節點 MCC 的運作。

(四) 5.1.7

確認各國執行 MEOSAR 相關進度及規範，並且遵守相關時程，以確保未來之運作。

參、心得及建議

一、心得

（一）COSPAS-SARSAT 重點議題仍由創立國之加、美、法、俄主導，組織成立目的為搜救，然而其背後有相關國際衛星通訊廠商業者利益，COSPAS-SARSAT 對通訊設備所設立之規格或標準，均涉及各廠商對 EPIRB、AIS、緊急位置發射機（ELT）、PLB、地面終端站（LUT）等設備之製造生產商機。

（二）中國大陸與歐盟就北斗衛星與伽利略衛星產生重疊覆蓋現象進行報告，中國大陸近年對推動北斗衛星加入 COSPAS-SARSAT 運作相當積極，其用意不僅在搜救，亦有意藉此發展衛星通訊相關產業，尤其中國大陸龐大漁船數之通訊亦使用北斗衛星系統，後續值得關注。

（三）本次經參與會議獲取會員於中軌道衛星建置之寶貴經驗，另在組織運作上亦體認到國際組織中運作之實力與一國技術能力及人才息息相關。

（四）本次會議期間，我國內花蓮地區於 107 年 2 月 6 日深夜，發生規模

6.0 強震，造成花蓮市區統帥大飯店塌陷傾斜，多人受困等災情，加拿大蒙特婁地區各媒體，及網路新聞均有大幅報導，日本、南韓、美國、義大利與 ICAO 等代表，均於會議期間向我團表達關心致意，除深為所動外，亦深感透過國際參與活動，有助於與各國強化互動瞭解。

二、建議

（一）建議我國未來建置中軌道衛星搜救系統時，能夠藉由獲取參加會議的最新資訊，提供我國隨時更新海難搜救效率，以提昇我國國際地位，肩負國際海難救護任務。

（二）我國刻正規劃漁船裝設船舶自動識別系統（AIS），未來建議可持續透過參與 COSPAS-SARSAT，並藉由國際參與及相互交流資訊，以獲得最新的海事安全訊息，提升我國船舶相關系統搜索救助效率。

（三）建議我國未來建置漁船裝設 AIS 計畫，除可藉由 COSPAS-SARSAT 與相關海事安全高度發展國家交流外，亦可增廣我國海事安全技術新知。

肆、附件

附件 1、會議出席人員

ANNEX 1

LIST OF PARTICIPANTS
FIFTY-NINTH SESSION OF THE COSPAS-SARSAT COUNCIL –
OPEN MEETING (CSC-59/OPN)

Argentina		
Lt Cdr Juan Eduardo Acosta	**Head of Delegation**	Argentine Navy
Mr Khalid Amr		Honeywell
Mr Jerry Nardi, Ph. D.		McMurdo
Australia		
Ms Christine Macmillian		AMSA
Brazil		
Cap Av Gustavo Goulart Rossi	**Head of Delegation**	Department of Airspace Control
Mr Ronan Souza Freitas		BRMCC
Mr Artur Couto		Honeywell
Canada		
Mr Michael Donald	**Head of Delegation**	PS/NSS
Mr Dan Rueger		PS/NSS
Mr Jim King		PS/NSS - Ovik Inc
Mr Farid Aziz		DND/Project
Mr Peter Andreadis		DND/Project
Mr Anindo Maiti		DND/Project
Maj Emmanuelle Gratton		OIC/CMCC
Capt Sheldon White		DOIC/CMCC
Mr J. P. Sharp		CCG
Ms Elisabeth Fraser		CCG
Ms Fahmina Kabir		DND/REMSSAT
Mr Ryan Anderson		DND/REMSSAT
Chile		
Mr Alejandro Navarro G.	**Head of Delegation**	CHMCC
Mr Juan Bastidas Pardo		Aeronautical Chilean Agency
Mr Juan Gatica		Aeronautical Chilean Agency
China (P.R. of)		
Ms Zeng Hui	**Head of Delegation**	China Maritime Safety Administration
Mr Xingsen Chen		Ministry of Transport
Mr Baohong Wang		China Maritime Safety Administration
Mr Min Zhou		China Maritime Search and Rescue Center
Dr Qian Sun		China Waterborne Transport Research Institute
Mr Zhen Song		China Transport Telecom and Info Center
Mr Wei Kang		China Transport Telecom and Info Center
Mr Jiantong Zhang		China Transport Telecom and Info Center
Mr Kewu Chang		China Satellite Navigation Office
Mr Qianyi Ren		Shanghai Engineering Center for Microsatellites

Cyprus		
Mr Antonis Lemesianos		Representation of the Republic of Cyprus to ICAO
Denmark		
Mr Claus B. Gerlén		Danish Transport and Construction Agency
Finland		
Lt Cdr Kimmo Ahvonen		The Finnish Border Guard (HQ)
France		
Mr Bruno Chazal	**Head of Delegation**	CNES
Mr Jean-Luc Mestre		CNES
Mr Didier Delcuvellerie		CNES
Germany		
Lt Col Hans-Joachim Rösen		RCC Münster
Greece		
Cdr HCG Fotios Kiamos	**Head of Delegation**	Maritime attaché in New York
Ms Vassiliki Lazari		Alternative Representative of Greece to ICAO
Mr Georgios Kyriakopoulos		National and Kapodistrian University of Athens
Italy		
Commander Pantaleo Dell'Olio	**Head of Delegation**	Italian Satellite Station
Mr Alessio Arcadio		ITMCC
Mr Henry Li		McMurdo Inc.
ITDC		
Mr Yung Chieh Shen	**Head of Delegation**	ITDC
Ms Shwu-Jing Chang		ITDC
Mr Yi-Hsien Chiu		FA.COA
Mr Chia-Chen Liu		FA.COA
Ms Shu-Hsien Shen		TAMCC
Mr Hsin-Hung Cheng		TAMCC
Mr Chia-Wei Tu		TAMCC
Mr You-Fu Hsu		ITDC Advisor
Ms Kai-Hsin Chen		ITDC Advisor
Japan		
Mr Kenji Nakanishi	**Head of Delegation**	Japan Coast Guard
Mr Yuji Emoto		Japan Coast Guard
Mr Anthony Daniel		Search and Rescue Solutions, Honeywell
Korea (Rep. of)		
Mr Myungkwan Yoon	**Head of Delegation**	Korea Coast Guard
Mr Hyungjun Kim		Korea Coast Guard
Mr Hwansang Yeo		Korea Coast Guard
New Zealand		
Mr Michael Hill	**Head of Delegation**	RCCNZ & Safety Services
Mr Rodney Bracefield		RCCNZ

Norway		
Mr Einar Ellingsen	**Head of Delegation**	Ministry of Justice and Public Security
Mr Tore Wangsfjord		NMCC
Mr Jeff Khorrami		McMurdo Inc.
Peru		
Rear Admiral Edgar Patterson	**Head of Delegation**	Maritime Authority of Peru
Captain Juan Carlos Montoya		Maritime Authority of Peru
Mr Enrique Saavedra		Honeywell Global Tracking
Qatar (State of)		
Brigadier Mohammed Hamad Al Shahwani	**Head of Delegation**	DJRCC, Ministry of Defence
Mr Issa Abdullah Al-Malki		Permanent Representative of Qatar to ICAO
Dr Vladislav Studenov		DJRCC, Ministry of Defence
Russian Federation		
Mr Andrey Kuropyatnikov	**CSC-59 Chair**	Morsviazsputnik
Mr Andrey Kushev	**Head of Delegation**	Morsviazsputnik
Mr Oleg Kem		Roscosmos
Mr Vitaly Mironichev		Roscosmos
Mr Sergey Moroz		ISDE
Mr Alexander Romanov		Russian Space Systems
Mr Andrey Fedoseev		Russian Space Systems
Mr Dmitry Antonov		Russian Space Systems
Mr Victor Iatsouk		Russian Space Systems
Saudi Arabia		
Mr Fahad Saud Alharbi	**Head of Delegation**	GACA – Saudi Navigation Services
Mr Faisal Ateeq Alzahrani		GACA – Saudi Navigation Services
Singapore		
Mr Goh Seng Peng Brian	**Head of Delegation**	Civil Aviation Authority of Singapore
Ms Ng Soo Hoon Corinna		Civil Aviation Authority of Singapore
South Africa		
Mr Cornelis De Beste	**Head of Delegation**	Telkom SOC Ltd
Ms Peggy Sebesho		Department of Transport
Spain		
Col Rafael Sahagún Schwartz	**Head of Delegation**	SPMCC - INTA
Ms Emilia Melián Martinez		SPMCC - INTA
Mr Esteban Holgado Noda		SPMCC - INTA

Turkey		
Mr Abdurrahman Kara	**Head of Delegation**	Ministry of Transport, Maritime Affairs & Communications (MSRCC)
Mr Ömer Adem Gazioglu		MSRCC-TRMCC
Mr Ömer Numan Dogrukol		Alternate Representative of Turkey on the ICAO Council
Colonel Ramazan Toper		Turkish Air Force
Major Mutlu Çelik		Turkish Coast Guard
Mr Richard Renner		Honeywell Global Tracking
Mr Oguz Aldemir		Directorate General of Civil Aviation - Turkey
Mr Ibrahim Cem Sahinkaya		Representative of Turkey on the ICAO Council
United Arab Emirates		
H.E.M/G S. Arthur Toumajan	**Head of Delegation**	UAE NSRC
Mr Mubarak Falah Alqahtani		UAE NSRC
Mr Ahmed S. Alghaithi		UAE NSRC
Mr Yousef Ahmed Al-Ali		UAE NSRC
Mr M. Hamad Almansoori		UAE NSRC
Mr Ayman Salah Mostafa Ali		UAE NSRC
United Kingdom		
Mr Richard Parkes	**Head of Delegation**	Director of Maritime Operations
Mr Mark Lawson		UK Maritime and Coastguard Agency
Mr Scott Simmons		Bermuda RCC
United States of America		
Mr Christopher O'Connors	**Head of Delegation**	NOAA
Mr Allan Knox		NOAA
Mr Larry LeBeau		NOAA/ERT
Mr James Miller		NOAA/Alion Science
Ms Sunny Petzinger		NOAA
Mr William Ruark		NOAA/ERT
Mr Mark Turner		NOAA
CAPT Christina Davidson		USCG
LCDR Erin Boyle		USCG
Mr Ed Thiedeman		USCG
Mr David Fuhrmann		USAF
Dr Lisa Mazzuca		NASA
Mr Javier Lecha		NASA
Mr George Theodorakos		NASA/ASRC
Viet Nam		
Mr Bui Minh Hong	**Head of Delegation**	VISHIPEL
Mr Le Minh Long		VISHIPEL
EC		
Mr Xavier Maufroid		European Commission

ICAO		
Mr Miguel Marin	**Head of Delegation**	ICAO/ANB-OPS
Mr Ian Knowles		ICAO/ANB-OPS
IMSO		
Mr Moin Ahmed		International Mobile Satellite Organisation
RTCM		
Mr Christopher Hoffman		ACR Electronics Inc.
Secretariat		
Mr Steven Lett	**Head of Secretariat**	
Ms Cheryl Bertoia		
Mr Dany St-Pierre		
Mr Craig Aronoff		
Mr Kevin Ammerman		
Mr Andryey Zhitenev		
Mr Benoît Helin		
Mr Eric Harpell		
Mr Arnaud Sindou		
Ms Miriam Paknys		
Ms Zuzana Ryndova		

附件 2、會議議程

ANNEX 3

**AGENDA FOR THE FIFTY-NINTH SESSION
OF THE COSPAS-SARSAT COUNCIL - OPEN MEETING
(CSC-59/OPN)**

1. Approval of Agenda

2. Status of the Programme

2.1 Status of Participation in Cospas-Sarsat
2.2 Cospas-Sarsat Report on System Status and Operations
2.3 Participants' Reports

3. Report of the Thirty-First Meeting of the Joint Committee

4. Space Segment, Ground Segment, Beacon Matters and System Operation

4.1 Space Segment Matters
4.2 Ground Segment Matters
4.3 Beacon Matters (C/S T.001-Compliant and Second-Generation Beacons)
4.4 International Beacon Registration Database
4.5 Quality Management System
4.6 Cospas-Sarsat Website

5. MEOSAR System Evolution

5.1 MEOSAR System Operations (EOC, IOC)
5.2 MEOSAR Demonstration and Evaluation (D&E)
5.3 MEOSAR Operational Transition, Implementation and Schedule (including amendments to document C/S R.012)

6. Strategic Planning

7. Institutional / Administrative Matters

7.1 Secretariat Activity Report
7.2 Final 2016 Financial Statements on the Common Costs of the Programme
7.3 Provisional 2017 Statements on the Common Costs of the Programme
7.4 2018 Secretariat Work Plan and Spending Plan
7.5 Funding Arrangements for the Common Costs of the Programme
7.6 Programme Management Policy (Document C/S P.011)

8. Liaison with International Organisations

8.1 International Maritime Organization (IMO)
8.2 International Civil Aviation Organization (ICAO)
8.3 International Telecommunication Union (ITU)
8.4 Other International Organisations

9. Review of Actions from the CSC-57 Open Meeting

10. Future Cospas-Sarsat Meetings - Dates, Venues, Chairpersons and Agenda/Terms of Reference

10.1 2018 Council Sessions
10.2 2018 Joint Committee Meeting
10.3 2018 Task Group and Experts Working Group Meetings
10.4 Programme Meetings Schedule and Calendar

11. Other Business

12. Approval of Summary Record

附件 3、會議紀錄

CSC-59/OPN/SR

SUMMARY RECORD

COSPAS-SARSAT COUNCIL

FIFTY-NINTH SESSION - OPEN MEETING

(CSC-59/OPN)

5 - 8 FEBRUARY 2018

ICAO Headquarters
Montréal, Canada

TABLE OF CONTENTS

LIST OF ANNEXES

COSPAS-SARSAT COUNCIL

SUMMARY RECORD
FIFTY-NINTH SESSION - OPEN MEETING
(CSC-59/OPN)

5 - 8 FEBRUARY 2018

ICAO Headquarters
Montréal, Quebec

The Open Meeting of the Fifty-Ninth Session of the Cospas-Sarsat Council (CSC-59/OPN) was held from Monday 5 February to Thursday 8 February 2018 at the ICAO Headquarters located in Montréal, Canada. Mr. Andrey Kuropyatnikov (Russian Federation) chaired the CSC-59 Open Meeting.

The Chair opened the CSC-59 Open Meeting on 5 February 2018, and with the Head of Secretariat extended a warm welcome to all participants.

The list of participants at the CSC-59 Open Meeting is provided at Annex 1 to this Summary Record. The meeting was attended by delegations from:

Argentina	Germany	Russian Federation
Australia	Greece	Saudi Arabia
Brazil	Italy	Singapore
Canada	ITDC	South Africa
Chile	Japan	Spain
China (P.R. of)	Korea (Rep. of)	Turkey
Cyprus	New Zealand	United Arab Emirates
Denmark	Norway	United Kingdom
Finland	Peru	United States of America
France	Qatar (State of)	Viet Nam

The Cospas-Sarsat Secretariat supported the meeting, which also was attended by the following Observer organizations: European Commission, ICAO, IMSO and RTCM.

The list of documents submitted to the CSC-59 Open Meeting is provided at Annex 2 to this Summary Record.

1: APPROVAL OF AGENDA

1.1 The Council **NOTED** documents:

- CSC-59/OPN/1/1 (CSC-57), which contained the provisional agenda,
- CSC-59/OPN/1/2 (Chair), which proposed a work plan for the conduct of the meeting,
- CSC-59/OPN/1/3-Corr.1, which provided a provisional list of participants,
- CSC-59/OPN/1/4, which provided a provisional list of documents.

1.2 The Council **DECIDED** to approve the agenda for the CSC-59 Open Meeting as provided at Annex 3 to this Summary Record, and the work plan proposed by the Chair.

2: STATUS OF THE PROGRAMME

2.1 Status of Participation in Cospas-Sarsat

2.1.1 The Council **NOTED** from document CSC-59/OPN/2/1-Rev.3 (Secretariat) that:

a) the current number of Cospas-Sarsat Participants was 44, including 4 Parties, 29 Ground Segment Providers, 9 User States, and 2 Ground Segment Operator organizations;

b) since the CSC-57 Session in December 2016, the following 13 Participants had provided updates to the names of their representatives or cooperating agencies to the Cospas-Sarsat Programme: Argentina, Chile, Cyprus, Germany, ITDC, Malaysia, Netherlands (The), Peru, Qatar (State of), Spain, Sweden, Turkey and Viet Nam;

c) Finland, Thailand and Tunisia had not identified names for their Representatives to the Cospas-Sarsat Programme, only their positions; and

d) the appropriate corrections had been made by the Secretariat to the revision of document C/S P.010, "List of States & Organizations Associated with or Contributing to the Cospas-Sarsat Programme" published on the Cospas-Sarsat website.

2.1.2 The Council **DECIDED** to invite:

a) all Participants to review document C/S P.010, available on the Cospas-Sarsat website, and continue to formally notify the Secretariat on a regular basis of any change of Representative or in the details of their cooperating agency; and

b) Finland, Thailand, and Tunisia to provide names of their Representatives to the Cospas-Sarsat Programme, in addition to their positions, for further inclusion by the Secretariat in document C/S P.010, for the purpose of improving communication with these Participants.

2.1.3 The Council NOTED from document CSC-59/OPN/Inf.8 (Qatar) that the:

a) Qatar association with the Programme had entered into force on 12 November 2017; and

b) Major activities of Qatar at the moment were concentrated on the existing Qatar ground segment commissioning, as well as the training of QAMCC operators.

2.2 Cospas-Sarsat Report on System Status and Operations

2.2.1 The Council **NOTED** from document CSC-59/OPN/2/2 (Secretariat):

a) the invitation to review the final version of "Cospas-Sarsat Report on System Status and Operations", C/S R.007 (January - December 2016), the draft of which was submitted at JC-31 in October 2017;

b) the recommendation of the Joint Committee that the Council approve document C/S R.007, No.33 with the late addition of the information that should be provided by the Netherlands and Tunisia, and any corrections that might be provided by Participants;

c) after JC-31, contact was made with the Netherlands and Tunisia, and the latest data available about beacon registries and regular SAR activities were included in document C/S R.007 No.33; and

d) the final version of document C/S R.007 No.33 had been submitted as a Red Book for approval of the Council with amendments mentioned above.

2.2.2 The Council **DECIDED** to approve document C/S R.007, "Cospas-Sarsat Report on System Status and Operations No.33 (January - December 2016)", as submitted to the Council.

2.3 Participants' Reports

The following reports were submitted by Participants for inclusion in this Summary Record.

2.3.1 Algeria

There were no additional comments to Algeria's report since JC-31 in October 2017.

2.3.2 Argentina

There were no additional comments to Argentina's report since JC-31 in October 2017.

2.3.3 Australia

There were no additional comments to Australia's report since JC-31 in October 2017.

2.3.4 Brazil

There were no additional comments to Brazil's report since JC-31 in October 2017.

2.3.5 Canada

There were no additional comments to Canada's report since JC-31 in October 2017.

2.3.6 Chile

There were no additional comments to Chile's report since JC-31 in October 2017.

2.3.7 China (P. R. of)

There were no additional comments to China's report since JC-31 in October 2017.

2.3.8 Cyprus

There were no additional comments to Cyprus' report since JC-31 in October 2017.

2.3.9 Denmark

It has been made possible for Danish users of a PLB to register it under Danish country code in the IBRD. Only a limited number of users have done so – still less than 10 – but Danish citizens can now legally bring with them a PLB to countries permitting the use.

The MCC-to-SPOC communication between Norway and Denmark is running smoothly. The processing of the new alert messages from the LGM received from NMCC is not giving any problems.

2.3.10 Finland

There were no additional comments to Finland's report since JC-31 in October 2017.

2.3.11 France

There were no additional comments to France's report since JC-31 in October 2017.

2.3.12 Germany

There were no additional comments to Germany's report since JC-31 in October 2017.

2.3.13 Greece

There were no additional comments to Greece's report since JC-31 in October 2017.

2.3.14 Hong Kong, China

There were no additional comments to Hong Kong's report since JC-31 in October 2017.

2.3.15 India

There were no additional comments to India's report since JC-31 in October 2017.

2.3.16 Indonesia

There were no additional comments to Indonesia's report since JC-31 in October 2017.

2.3.17 Italy

ITMCC, IT LEOLUT (2471) and IT GEOLUT (2472) were working properly. ITMCC is provided with a primary server that replicates data to a backup unit, ready to be connected to the MCC network in case of failure of the primary one.

ITMCC is using FTPV as the primary link with all MCCs in the CDDR, and AFTN as a secondary link. AFTN and other available such as fax and email were used overall with SPOCs.

According to the procedure, Italy performed monthly communication tests with SPOCs within its MCC service area with positive results in terms of response from the majority of the SPOCs.

The Italian National Beacon Registry was managed by the Cospas-Sarsat Satellite Station personnel available 24/7 with an operator on duty at ITMCC.

As of 31 December 2017, there were 17,274 beacons registered into the IT BRD of which: 10,208 EPIRBs, 3,397 ELTs and 3,669 PLBs.

2.3.18 ITDC

ITDC/TAMCC operates two LEOLUTs and one MCC. They are now fully operational.

The ITDC official representative at Cospas-Sarsat changed. Mr. Tian-Tsair Su was appointed as an official representative since 10 January 2018. He is now the Chairman of ITDC and the senior executive Vice-President of Chunghwa Telecom. Co., Ltd. A formal notice letter of the representative change was submitted to the Secretariat during CSC-59.

2.3.19 Japan

There were no additional comments to Japan's report since JC-31 in October 2017.

2.3.20 Korea (Rep. of)

There were no additional comments to Korea's report since JC-31 in October 2017.

2.3.21 Malaysia

There were no additional comments to Malaysia's report since JC-31 in October 2017.

2.3.22 Netherlands (The)

There were no additional comments to The Netherlands' report since JC-31 in October 2017.

2.3.23 New Zealand

New Zealand's report on System Status and operations is provided as document JC-31/2/31 and in the subsequent meeting updated Status report. In addition, New Zealand submits the following information.

MEOSAR transition: New Zealand continues to use the positive data received from the NZ MEOLUT at Goudies Road. This has contributed to many successful SAR responses and in some instances, has been the only Cospas-Sarsat data available throughout the prosecution of the rescue. Analysis of data has shown that in the New Zealand case for the period January to December 2017 MEO data provide an average of five minutes lead time over GEO alerts and 27.5 minutes over LEOLUT alerts. This early alerting has continued to enable greater use to be made of the daylight hours, and also to resolve inadvertent activations increasing the awareness of the number of identified unregistered beacons.

GEOLUT transition: The future commissioning of the GEOLUT aligned to Louch 5A and the data provided by this satellite will add to the capability of the New Zealand Goudies Road site now comprising the six MEOLUT antenna and the two GEOLUTs aligned to GOES 15 and Louch 5A.

LEOLUT decommissioning: The New Zealand LEOLUT and two GEOLUTs at the Morison site, North East of Wellington, were shut down at midnight 31 December 2017 UTC.

Drifting beacon trials: New Zealand has now undertaken two trials where the EPIRB has been attached to a marine buoy at a fixed location. The first trial in late 2017 was in a moderate sea and the second trial was in heavy seas. Results of these trials are still being analyzed. A further test of a drifting EPIRB tethered to an iSLDMB will be undertaken later in February 2018 in an area off the East coast of New Zealand.

Beacon Data Base upgrade: Work is continuing on a project to upgrade the current New Zealand beacon registration data base. This will enable online registrations and direct amendments to personal data. The target for this to become operational is 5 March 2018. A media publicity campaign to announce the availability of the online registration facility and the instructions for its use is also being developed.

Beacon Registrations: The number of beacons registered annually continues to grow. In 2017 there were 178 ELTs, 2,078 EPIRBs and 8,831 PLBs new registrations; de-registrations resulted in a net reduction of 29 ELTs and 9 EPIRBs but PLBs increased by 447 over the annual 2016 values. At the end of 2017 New Zealand had 2,791 ELTs, 17,575 EPIRBs and 51,753 registered PLBs (totaling 72,119 registrations). The use of MEOSAR has indicated that the number of unregistered beacons may be higher than originally thought due to the increasing number of inadvertent unregistered activations being detected.

2.3.24 Nigeria

There were no additional comments to Nigeria's report since JC-31 in October 2017.

2.3.25 Norway

The Norwegian LGM-MCC underwent commissioning in May 2017, with further tests after this time for pending issues. After a successful commissioning test campaign and approval, the Norwegian Mission Control Centre switched from LEO-GEO to LEO-GEO-MEO MCC on 27 September 08:00 UTC with the ground segment consisting of Norwegian LEOLUT, GEOLUT and EU/Spitsbergen MEOLUT.

The commissioning report was reviewed at JC-31 with some inconsistencies noted. Additional corrections and testing was required for LGM-NMCC to be declared at FOC. It is now completed and awaiting final approval by Council CSC-59.

2.3.26 Pakistan

There were no additional comments to Pakistan's report since JC-31 in October 2017.

2.3.27 Peru

There were no additional comments to Peru's report since JC-31 in October 2017.

2.3.28 Poland

There were no additional comments to Poland's report since JC-31 in October 2017.

2.3.29 Qatar (State of)

The State of Qatar report on System status and operations for the period from 12 November to 31 December 2017 was provided to the Secretariat as document JC-32/2/1. In addition, the following three documents were submitted to the CSC-59/OPN Session: CSC-59/OPN/Inf.8 (status of participation), CSC-59/OPN/Inf.9 (ground segment commissioning) and CSC-59/OPB/Inf.10 (future meetings).

On the margins of the CSC-59 Open Meeting, the State of Qatar in cooperation with the vendor and the SPMCC, as the nodal MCC, have discussed and agreed on the preliminary plan and dates of its ground segment (LGM MCC, LEOLUT and MEOLUT) commissioning, as well as the QAMCC operators training with the further review of this matter at the coming SCDDR Meeting to be held from 13 to 15 March 2018 in Maspalomas, Spain.

The IBRD maintenance, reregistration of 406 MHz beacons with Qatari country code (466) from neighboring countries databases, beacons deployment, beacon regulations, future DJRCC/QAMCC relocation and other Cospas-Sarsat matters are under the permanent control in the State of Qatar.

2.3.30 Russian Federation

There were no additional comments to the Russian Federation's report since JC-31 in October 2017.

2.3.31 Saudi Arabia

There were no additional comments to Saudi Arabia's report since JC-31 in October 2017.

2.3.32 Serbia

There were no additional comments to Serbia's report since JC-31 in October 2017.

2.3.33 Singapore

There were no additional comments to Singapore's report since JC-31 in October 2017.

2.3.34 South Africa

In addition to South Africa's report on System Status provided at JC-31 Meeting held in October 2017, the Council was also invited to note that South Africa has appointed the Air Traffic and Navigation Services SOC Ltd. as the implementing agent of the MEOSAR ground segment capability and solution. The implementing agent has issued a tender inviting prospective service providers to deploy a MEOSAR MCC and LUT on 5 November 2017 with the closing date of 5 February 2018. It is expected that the preferred contractor will be appointed by end of March 2018.

2.3.35 Spain

There were no additional comments to Spain's report since JC-31 in October 2017.

2.3.36 Sweden

There were no additional comments to Sweden's report since JC-31 in October 2017.

2.3.37 Switzerland

In addition to the Switzerland's report on System Status provided at JC-31 Meeting held in October 2017, there was a change of regulatory status: content of national EPIRB database was transferred to IBRD and all beacon owners were requested to verify and update their data. Actual status as of 1 January 2018: PLBs and EPIRBs are registered only in the IBRD. ELTs in our national database.

2.3.38 Thailand

There were no additional comments to Thailand's report since JC-31 in October 2017.

2.3.39 Tunisia

There were no additional comments to Tunisia's report since JC-31 in October 2017.

2.3.40 Turkey

There were no additional comments to Turkey's report since JC-31 in October 2017.

2.3.41 United Arab Emirates

There were no additional comments to the UAE's report since JC-31 in October 2017.

2.3.42 United Kingdom

There were no additional comments to the UK's report since JC-31 in October 2017.

2.3.43 United States of America

There were no additional comments to the USA's report since JC-31 in October 2017.

2.3.44 Viet Nam

There were no additional comments to Viet Nam's report since JC-31 in October 2017.

2.3.45 EC

There were no additional comments provided by the EC.

2.3.46 EUMETSAT

There were no additional comments provided by EUMETSAT.

2.3.47 EUROCAE

There were no additional comments provided by EUROCAE.

2.3.48 ICAO

There were no additional comments provided by ICAO.

2.3.49 RTCM

In addition to the information provided by RTCM at JC-31 in October 2017, RTCM wishes to inform Cospas-Sarsat that it expects to complete an update to its PLB standard in March 2018. The revised version of the RTCM PLB standard addresses both C/S T.001 and C/S T.018 compliant beacons and mandates the inclusion of an integral GNSS receiver with optional RLS capability. In addition, the standard includes two options for homing and on-scene locating either a 121.5 MHz signal with a duty cycle of 33% or greater or a combined 121.5 MHz signal with an interleaved AIS locating signal. It is believed that this will be the world's first implementing specification for Cospas-Sarsat SGBs and demonstrates RTCM's ongoing commitment to the future of the Cospas-Sarsat program and 406 MHz beacons.

3: REPORT OF THE THIRTY-FIRST MEETING OF THE JOINT COMMITTEE

3.1 JC-31 Meeting Recommendations

3.1.1 The Council **NOTED**:

a) the Report of the JC-31 Meeting held in Montréal, Canada from 16 to 27 October 2017;

b) the list of action items from JC-31 presented in document CSC-59/OPN/3/1 (Secretariat), which had substantially increased in length due in part to the number of action items that remained unresolved since as early as JC-27;

c) the presentation of document CSC-59/OPN/3/3 (Secretariat) by the Head of Secretariat, which listed the JC-31 recommendations to the Council; and

d) that the JC-31 recommendations were discussed in greater detail in the following sections.

3.1.2 The Council **NOTED** with gratitude the fine work of the JC-31 Chair, Mr. Michael Donald (Canada), the OWG-31 Chair, Mr. Allan Knox (USA), and the TWG-31 Chair, Mr. Yoan Grégoire (France).

3.2 JC-31 Meeting Recommendations to the Council

MODIFICATIONS TO GROUND SEGMENT EQUIPMENT

3.2.1 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 2.1.7) that Ground Segment Providers urgently prepare for Ground Segment changes required for the transition to MEOSAR IOC and declaration of an operational Return Link Service (RLS), taking note of the relatively short implementation deadline for many of the agreed changes to the operational and technical documents, as reflected in Annex 31 of the JC-31 Report.

3.2.2 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 2.1.9) that the Council:

a) revisit the change management process in document C/S P.011 ["Programme Management Policy"] and propose modifications as necessary to reflect the current volume of changes agreed to the System; and

b) consider possible actions that might be required, given the delays in implementation of critical changes to the Ground Segment as reported by Participants at JC-31.

3.2.3 The Council **NOTED** that the matter of Ground Segment changes agreed at JC-31 was further discussed in documents CSC-59/OPN/3/2 (Secretariat), and CSC-59/OPN/3/10 (USA) discussed in response at section 3.3 of this Summary Record.

3.2.4 The Council **NOTED**:

a) the Joint Committee recommendation (JC-31 Report, section 2.1.14) that the Council approve document C/S R.007, "Cospas-Sarsat Report on System Status and Operations", No.33 (January - December 2016) with the late addition of the information that should be provided by The Netherlands and Tunisia, and any corrections that might be provided by Participants; and

b) that the decision to approve document C/S R.007, No.33 (January - December 2016) was reported at section 2.2.2 of this Summary Record.

DOCUMENT C/S R.022

3.2.5 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 3.2.7, and its duplicate entry in section 3.2.77) that the Council approve the draft amendments to document "Cospas-Sarsat Louch GEOSAR Performance Evaluation Report" provided at Annex 14 to the JC-31 Report as document C/S R.022, Draft Issue 1.

3.2.6 The Council **DECIDED** to approve Issue 1 of document C/S R.022, "Cospas-Sarsat Louch GEOSAR Performance Evaluation Report" as submitted to the Council.

GEOSAR SATELLITE COMMISSIONING REPORTS

3.2.7 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 3.2.76) that the Council approve the commissioning reports of satellites INSAT-3DR, GOES-16 and MSG-1.

3.2.8 The Council **DECIDED** to approve the commissioning report of satellite INSAT-3DR.

3.2.9 The Council **DECIDED** to approve the commissioning report of satellite GOES-16.

3.2.10 The Council **DECIDED** to approve the commissioning report of satellite MSG-1.

MEOSAR SATELLITE COMMISSIONING REPORTS

3.2.11 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 3.2.81) that the Council approve the commissioning reports of:

a) the DASS satellites C/S IDs 301, 302, 303, 306, 308, 309, 310, 312, 315, 316, 317, 318, 319, 323, 324, 326, 327, 330, 332 and 329; and

b) the Galileo satellites C/S IDs 401, 402, 403, 404, 405, and 407 (see document CSC-59/OPN/Inf.18 (EC) noted in section 4.1.8 of this Summary Record).

3.2.12 The Council **DECIDED** to approve the commissioning reports of C/S IDs 301, 302, 303, 306, 308, 309, 310, 312, 315, 316, 317, 318, 319, 323, 324, 326, 327, 330, 332 and 329 DASS satellites.

3.2.13 The Council **DECIDED** to approve the commissioning reports of C/S IDs 401, 402, 403, 404, 405, and 407 Galileo satellites.

DOCUMENT C/S T.011

3.2.14 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 3.3.7) that the Council approve the draft amendments to document "Description of the 406 MHz Payloads Used in the Cospas-Sarsat GEOSAR System" provided at Annex 21 to the JC-31 Report as document C/S T.011, Draft Issue 2.

3.2.15 The Council **DECIDED** to approve Issue 2 of document C/S T.011, "Description of the 406 MHz Payloads Used in the Cospas-Sarsat GEOSAR System" as submitted to the Council.

DOCUMENT C/S R.012

3.2.16 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 3.3.19) that the Council approve the draft amendments to document "Cospas-Sarsat 406 MHz MEOSAR Implementation Plan" provided at Annex 12 to the JC-31 Report as document C/S R.012, Issue 1 – Draft Revision 13.

3.2.17 The Council **NOTED** from document CSC-59/OPN/3/4 (Secretariat) proposed amendments to the Red Book version of document C/S R.012, and that:

a) JC-31:

- recommended amendments to document C/S R.012, "Cospas-Sarsat 406 MHz MEOSAR Implementation Plan" for Council approval, to reflect the SAR payloads planned to be installed on board the BeiDou (BDS) navigation satellites, should the Council decide to proceed with the integration of the SAR/BeiDou system into the MEOSAR system,
- invited (TWG-31/AI.5) Space Segment Providers, China and the Secretariat to further develop changes to C/S R.012 and other System documentation, as appropriate, and proposed changes for review at CSC-59 and relevant future meetings;

b) additional amendments to the Red Book version of document C/S R.012 were required for the consistent inclusion of SAR/BDS-related information and addition of the SAR/BDS constellation as a fourth MEOSAR constellation;

c) it was required, for consistency throughout the document, to add references to the SAR/BDS constellation, which mainly consisted of adding SAR/BDS as the fourth constellation, and replacing "three" by "four", as appropriate, when referring to the MEOSAR constellations that will contribute to the MEOSAR space segment; and

d) it was also proposed to use the 600 series for the SAR/BDS spacecraft IDs.

3.2.18 The Council **NOTED** from document CSC-59/OPN/3/4 the recommendations to:

a) consider and amend, as appropriate, the proposed changes to document C/S R.012 provided at Attachment 1, should the Council decide that the SAR/BDS constellation information be added to document C/S R.012; and

b) approve the revised version of document C/S R.012.

3.2.19 The Council **NOTED** from discussion of document CSC-59/OPN/3/4 that:

a) section 1.3 of document C/S R.012 should be amended to indicate that the European Commission, representing the European Union, was the entity now in charge of the SAR/Galileo programme (instead of the Galileo Joint Undertaking (GJU) / European Space Agency (ESA));

b) the Council should invite China to work on establishing a policy document to formally settle the cooperation between the Parties and China on the SAR/BDS MEOSAR space segment contribution, which might be based on the model of documents C/S P.009, C/S P.014 and C/S P.017;

c) further technical discussions were required to coordinate the SAR/BDS downlink frequency with the SAR/Galileo downlink frequency;

d) the matter of the coordination of the SAR/BDS and SAR/Galileo downlink frequencies had first been addressed in bilateral discussions in view of the urgency of the matter, but should be now be addressed with other Space Segment Providers;

e) the changes proposed in document CSC-59/OPN/3/4 to document C/S R.012 and in its Red Book were intended to document SAR/BDS payload information;

f) the SAR/BDS satellites were not yet considered part of the MEOSAR space segment, as they were not yet proposed to be included in document C/S T.016;

g) China had submitted document CSC-59/OPN/Inf.21 to provide additional information on the SAR/BDS payloads (see section 4.1.6 of this Summary Record);

h) further changes might be required to document C/S R.012, following the review of document CSC-59/OPN/5/5 (EC/China) (see section 5.1.15 of this Summary Record) regarding the required coordination between the SAR/BDS SAR/Galileo downlink frequencies; and

i) additional changes were proposed to document C/S R.012 in document CSC-59/OPN/5/6 (see section 5.3.1 of this Summary Record).

3.2.20 The Council **NOTED** from discussion of document CSC-59/OPN/3/4 general agreement to the changes proposed to document C/S R.012 as provided at Annex 8 to this Summary Record, which included:

a) the changes proposed in document CSC-59/OPN/3/4; and

b) a change to indicate that the SAR/Galileo Programme was now managed by the European Commission, representing the European Union.

3.2.21 The Council **NOTED** from discussion of document CSC-59/OPN/3/4 that further changes to document C/S R.012 were discussed in section 5.3.1 of this Summary Record.

3.2.22 The Council **DECIDED** to request the Secretariat to draft a letter on behalf of the Council to invite China to jointly work on establishing a policy instrument between the Parties and China to formally include the SAR/BDS satellite constellation, as a Chinese contribution, to the MEOSAR space segment of the Cospas-Sarsat System, and provide this for review by the Party Representatives.

3.2.23 The Council **DECIDED** to approve Issue 1, Revision 13 of document C/S R.012, "Cospas-Sarsat 406 MHz MEOSAR Implementation Plan", with the additional amendments proposed in documents CSC-59/OPN/3/4 and CSC-59/OPN/5/6, as provided at Annex 8 to this Summary Record.

DOCUMENT C/S T.016

3.2.24 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 3.3.20) that the Council approve the draft amendments to document "Description of the 406 MHz Payload Used in the Cospas-Sarsat MEOSAR System" provided at Annex 22 to the JC-31 Report as document C/S T.016, Issue 1 – Draft Revision 3.

3.2.25 The Council **NOTED** from document CSC-59/OPN/3/8 (Secretariat) proposed amendments to Tables B.1, B.2, B.3 and B.4 in the Red Book version of document C/S T.016 to provide the MEOSAR technical parameters reported in the commissioning reports of MEOSAR satellites reviewed by JC-31, and that:

a) due to the volume of work and the lack of time during JC-31, document C/S T.016 had not been reconciled and aligned with the information provided in the MEOSAR satellite commissioning reports and the latest information available on MEOSAR satellites; and

b) changes were proposed to Tables B.1, B.2, B.3 and B.4 in document C/S T.016 as recommended by JC-31 in its Red Book version submitted to CSC-59 for approval, to align them with:

- the identification parameters of new MEOSAR satellites recently made available for operations, in Table B.1,
- the RF configuration of MEOSAR satellites according to the latest information available, in Table B.2,
- the filter settings parameters provided in the MEOSAR satellite commissioning reports reviewed at JC-31, in Tables B.3 and B.4.

3.2.26 The Council also **NOTED** from document CSC-59/OPN/3/8 the recommendations to:

a) consider and amend, as appropriate, the proposed changes to document C/S T.016, to align Tables B.1, B.2, B.3 and B.4 with the information provided in MEOSAR satellites commissioning reports reviewed and recommended for approval by JC-31, and the latest information available on MEOSAR satellite configuration; and

b) approve the revised version of document C/S T.016, Issue 1, Revision 3.

3.2.27 The Council **NOTED** from discussion of document CSC-59/OPN/3/8:

a) that the status of MEOSAR satellite 501 in Table B.2 should be reflected as being "Under Test", as in document CSC-59/OPN/Inf.1; and

b) general agreement to the changes proposed to document C/S T.016, including the updated status for satellite 501, as provided in Annex 12 to this Summary Record.

3.2.28 The Council **DECIDED** to approve Issue 1 – Revision 3 of document C/S T.016, "Description of the 406 MHz Payloads Used in the Cospas-Sarsat MEOSAR System" with the additional amendments proposed in document CSC-59/OPN/3/8, and the editorial update of the satellite 501 status, as provided at Annex 12 to this Summary Record.

DOCUMENT C/S T.017

3.2.29 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 3.3.21) that the Council approve the draft amendments to document "Cospas-Sarsat MEOSAR Space Segment Commissioning Standard" provided at Annex 23 to the JC-31 Report as document C/S T.017, Issue 1 – Draft Revision 4.

3.2.30 The Council **DECIDED** to approve Issue 1 - Revision 4 of document C/S T.017, "Cospas-Sarsat MEOSAR Space Segment Commissioning Standard" as submitted to the Council.

LUT COMMISSIONING REPORTS

3.2.31 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.2.23) that the Council approve the commissioning of the GEOLUT (5124), located at Taupo, New Zealand, into the Cospas-Sarsat System.

3.2.32 The Council **DECIDED** to approve the commissioning of the GEOLUT (5124), located at Taupo, New Zealand, into the Cospas-Sarsat System.

3.2.33 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.2.26) that the Council approve the commissioning of the GEOLUT (4707), located at Abu Dhabi, UAE, into the Cospas-Sarsat System.

3.2.34 The Council **DECIDED** to approve the commissioning of the GEOLUT (4707), located at Abu Dhabi, UAE, into the Cospas-Sarsat System.

3.2.35 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.2.28) that the Council approve the commissioning into the Cospas-Sarsat System at MEOSAR EOC performance level of the MEOLUT (4314) located at Futtsu, Japan with a declared coverage area (DCA) radius of 2,000 km.

3.2.36 The Council **DECIDED** to approve the commissioning of the MEOLUT (4314), located at Futtsu, Japan into the Cospas-Sarsat System for use during MEOSAR EOC, with a DCA radius of 2,000 km.

3.2.37 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.2.30) that the Council approve the commissioning into the Cospas-Sarsat System at MEOSAR EOC performance level of the MEOLUT (5125) located at Taupo, New Zealand with a DCA radius of 2,500 km.

3.2.38 The Council **DECIDED** to approve the commissioning of the MEOLUT (5125), located at Taupo, New Zealand into the Cospas-Sarsat System for use during MEOSAR EOC,

with a DCA radius of 2,500 km.

3.2.39 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.2.32) that the Council approve the commissioning into the Cospas-Sarsat System at MEOSAR EOC performance level of the MEOLUT (5034) located at Mingenew, Australia with a DCA radius of 2,500 km.

3.2.40 The Council **DECIDED** to approve the commissioning of the MEOLUT (5034), located at Mingenew, Australia into the Cospas-Sarsat System for use during MEOSAR EOC, with a DCA radius of 2,500 km.

3.2.41 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.2.34) that the Council approve the commissioning into the Cospas-Sarsat System at MEOSAR EOC performance level of the MEOLUT (7015) located at El Palomar, Argentina with a DCA radius of 2,500 km.

3.2.42 The Council **DECIDED** to approve the commissioning of the MEOLUT (7015), located at El Palomar, Argentina into the Cospas-Sarsat System for use during MEOSAR EOC, with a DCA radius of 2,500 km.

3.2.43 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.2.36) that the Council approve the commissioning into the Cospas-Sarsat System at MEOSAR EOC performance level of the MEOLUT (3165) located at Shirleys Bay, Canada with a DCA radius of 3,500 km.

3.2.44 The Council **DECIDED** to approve the commissioning of the MEOLUT (3165), located at Shirleys Bay, Canada into the Cospas-Sarsat System for use during MEOSAR EOC, with a DCA radius of 3,500 km.

MCC COMMISSIONING

3.2.45 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.3.6) that it commission the new LG ASMCC into the Cospas-Sarsat System.

3.2.46 The Council **DECIDED** to approve the commissioning of the new LG ASMCC into the Cospas-Sarsat System.

3.2.47 The Council **NOTED** the Joint Committee conditional recommendation (JC-31 Report, section 4.3.11) that the Council commission the new LGM NMCC into the Cospas-Sarsat System, pending resolution of the identified issues, with further information provided to ensure the new NMCC met all requirements of document C/S A.006.

3.2.48 The Council further **NOTED** that complementary information ensuring the New LGM NMCC met all the requirements of document C/S A.006 was provided in document CSC-59/OPN/4/1-Corr.1 (France) and its attachment, and the commissioning of the LGM MCC was further discussed in section 4.2.7 of this Summary Record.

DOCUMENT C/S T.002

3.2.49 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.4.18), that the Council approve the draft amendments to document "Cospas-Sarsat LEOLUT Performance Specification and Design Guidelines" provided at Annex 16 to the JC-31 Report as document C/S T.002, Draft Issue 5.

3.2.50 The Council **DECIDED** to approve Issue 5 of document C/S T.002, "Cospas-Sarsat LEOLUT Performance Specification and Design Guidelines" as submitted to the Council.

DOCUMENT C/S T.003

3.2.51 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.4.19), that the Council approve the draft amendments to document "Description of the 406-MHz Payloads used in the Cospas-Sarsat LEOSAR System" provided at Annex 17 to the JC-31 Report as document C/S T.003, Draft Issue 5.

3.2.52 The Council **DECIDED** to approve Issue 5 of document C/S T.003, "Description of the 406-MHz Payloads used in the Cospas-Sarsat LEOSAR System" as submitted to the Council.

DOCUMENT C/S T.009

3.2.53 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.4.20), that the Council approve the draft amendments to document "Cospas-Sarsat GEOLUT Performance Specification and Design Guidelines" provided at Annex 20 to the JC-31 Report as document C/S T.009, Draft Issue 2.

3.2.54 The Council **DECIDED** to approve Issue 2 of document C/S T.009, "Cospas-Sarsat GEOLUT Performance Specification and Design Guidelines" as submitted to the Council.

COMPLIANCE IMPLEMENTATION DATE

3.2.55 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.4.21), that the Council approve an implementation date of June 2018 for the LEOLUTs and GEOLUTs to comply with documents C/S T.002, Draft Issue 5 and C/S T.009, Draft Issue 2, respectively.

3.2.56 The Council **DECIDED** to approve an implementation date of December 2018 for the LEOLUTs and GEOLUTs to comply with documents C/S T.002, Issue 5, and C/S T.009, Issue 2, respectively.

MEOLUT SPECIFICATIONS – DOCUMENT C/S T.019

3.2.57 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.4.52) that the Council approve the draft amendments to document "Cospas-

Sarsat MEOLUT Performance Specification and Design Guidelines" provided at Annex 25 to the JC-31 Report as document C/S T.019, Issue 2 – Draft Revision 1.

3.2.58 The Council **NOTED** from document CSC-59/OPN/3/7 (Secretariat) proposed amendments to Table B.1 and Table B.3 of the Red Book version of document C/S T.019, and that:

a) JC-31 agreed new text recommended for Council approval:

- in the new section 4.2.5 regarding multiple invalid C/S T.001 beacon message processing,
- in section 4.2.4.1 "C/S T.001 Message Validation" regarding the message validation "from the same transmitted burst through another channel or bursts within ± 5 minutes",
- in Annex B "Beacon Message Processing Information", to include three new tables;

b) unfortunately, due to the volume of work and the press of time, Tables B.1 and B.3 were not reconciled with the text agreed in the body of the document, which would cause a misunderstanding when reading Tables B.1 and B.3;

c) changes were proposed to Tables B.1 and B.3 as recommended by JC-31 in the Red Book version of document C/S T.019, to align them with the text of sections 4.2.5 and 4.2.4; and

d) to ensure consistency of those two tables, it was merely necessary to clarify the last two rows of Tables B.1 and B.3 by using text from sections 4.2.5 and 4.2.4.1, as provided in document CSC-59/OPN/3/7.

3.2.59 The Council also **NOTED** from document CSC-59/OPN/3/7 the recommendations that it:

a) consider and amend, as appropriate, the proposed changes to document C/S T.019 to align Tables B.1 and B.3 with the agreed document text for multiple invalid C/S T.001 beacon message processing, as recommended by JC-31 for Council approval; and

b) approve the revised version of document C/S T.019.

3.2.60 The Council **NOTED** from discussion of document CSC-59/OPN/3/7:

a) that there might still be some misunderstanding about the fixed bits of the beacon messages that should be resolved;

b) that the proposed changes were only intended to align the text of Annex B with the body of the document;

c) that clarification, if needed, regarding the fixed bits should be addressed in a technical meeting after conducting appropriate testing; and

d) general agreement to the proposed changes to document C/S T.019, as provided in Annex 14 to this Summary Record.

3.2.61 The Council **DECIDED** to approve Issue 2 – Revision 1 of document C/S T.019, "Cospas-Sarsat MEOLUT Performance Specification and Design Guidelines" with the additional amendments proposed in document CSC-59/OPN/3/7, as provided at Annex 14 to this Summary Record.

MEOLUT COMMISSIONING STANDARDS – DOCUMENT C/S T.020

3.2.62 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 4.4.53) that the Council approve the draft amendments to document "Cospas-Sarsat MEOLUT Commissioning Standard" provided at Annex 26 to the JC-31 Report as document C/S T.020, Issue 1 – Draft Revision 2.

3.2.63 The Council **NOTED** from document CSC-59/OPN/3/6-Corr.1 (Secretariat) proposed amendments to the Red Book version of document C/S T.020, and that:

a) during the preparation of its Red Book version for review by the Council, inconsistencies were discovered among specifications regarding the:

- ELT(DT) test scripts in document C/S T.020 and the ELT(DT) beacon message repetition-rate specification provided in section 2.2.1 of document C/S T.001 and section 2.2.1 of document C/S T.018,
- expected processing of tests MV5, MV6 and MV7 in section D.2.1 of document C/S T.020,
- message field (MF) reference for C/S T.018 raw beacon-message data collection in section E.3 of document C/S T.020 and the raw data MF definition in document C/S T.020;

b) changes were proposed to sections D.3.2, D.3.4 and E.3 as recommended by JC-31 in the Red Book version of document C/S T.020, to align it with the text of:

- section 2.2.1 of document C/S T.001 regarding the ELT(DT) repetition period,
- section 2.2.1 of document C/S T.018 regarding the ELT(DT) repetition period;

c) expected processing for tests MV5, MV6 and MV7 in section D.2.1 of document C/S T.020 should be corrected to accurately reflect the agreed document text in section 4.2.5, "Multiple Invalid C/S T.001 Beacon Message Processing", of document C/S T.019; and

d) regarding the definition of new MF #90 and MF #91 agreed in Appendix B.1 to Annex B of document C/S A.002, it was proposed to concatenate these two messages fields, in field 3 of the section E.3 table in document C/S T.020.

3.2.64 The Council also **NOTED** from document CSC-59/OPN/3/6-Corr.1 the recommendations that it:

a) consider and amend, as appropriate, the proposed changes to document C/S T.020, provided at Attachment 1, to align sections D.3.2, D.3.4 and E.3 with the agreed document text for the message repetition rate specification for C/S T.001- and

C/S T.018-based ELT(DT)s, and the definitions of MF #90 and MF #91 recommended by JC-31 for Council approval; and

b) approve the revised version of document C/S T.020.

3.2.65 The Council **NOTED** from discussion of document CSC-59/OPN/3/6-Corr.1:

a) that the full received messages (i.e., the 250 bit messages) should be provided in field 3 of the section E.3, rather than a concatenation of MF #90 and MF #91; and

b) general agreement:

- that the full received messages should be collected in field 3 of the section E.3 table,
- to the changes proposed to document C/S T.020, as provided in Annex 15 to this Summary Record.

3.2.66 The Council **NOTED** from discussion of the approval of document C/S T.020:

a) that, following the review of the proposed implementation dates in document CSC-59/OPN/3/10 (USA) for the SGB-related System changes, the approval of document C/S T.020 at this Council Session might be understood as requiring that an SGB capability be part of MEOLUT and MCC recommissioning required for entrance into MEOSAR IOC;

b) views that:

- the changes to document C/S T.020 could be supported in principle, but that the SGB-related changes, if understood to be mandated for implementation in all MEOLUTs at this time, might impede the extensive efforts to commission MEOLUTs toward the MEOSAR IOC milestone;
- the approval of the Red Book version of document C/S T.020, and in particular of the SGB-related changes, could not be accomplished until the possible impact of their implementation on MEOSAR IOC entrance and the commissioning of the SGB capability on MEOLUTs was clearly identified;

c) a view that:

- Participants, in particular those that would undertake MEOLUT commissioning in the short term, should know whether their MEOLUT needed to be commissioned against the SGB performance standard of this revision of document C/S T.020,
- the commissioning of a MEOLUT with an SGB capability would not be possible at this stage, even with the approval of the revision to document C/S T.020 by CSC-59, as key specifications were still not final (i.e., remained in brackets) in document C/S T.019, "Cospas-Sarsat MEOLUT Performance Specification and Design Guidelines",
- SGB distress alerts should not be authorized for distribution until the SGB Demonstration & Evaluation phase was completed,
- SGBs were still under development and it was premature to assess when a MEOLUT with an SGB capability could be commissioned,

- a disclaimer could be added on the front page of document C/S T.020 to inform participants that the decision to commission the SGB capability for MEOLUTs had not yet been taken and that the SGB aspects of the commissioning standard would only be applicable at a time when the Programme so decided;

d) a view that:

- objections to the approval of the SGB-related proposed revisions to document C/S T.020 should have been made in an appropriate response paper,
- issues raised regarding the MEOLUT commissioning of the SGB capability, including, in particular, whether this capability should be required for IOC commissioning, also concerned the commissioning of the FGB- and SGB-based ELT(DT) capabilities,
- MEOLUT evolution would be facilitated by upgrading them for RLS, ELT(DT) FGB and SGB capabilities at the same time,
- no disclaimer should be added to document C/S T.020;

e) a view:

- sharing the concern expressed regarding the impact that the commissioning of a MEOLUT SGB capability would have on the planned partial recommissioning for MEOSAR IOC,
- that the proposed implementation dates for the MEOLUT SGB capability might need to be revised;

f) a view that the anticipated June 2018 task group could review the MEOSAR IOC preparation and its relationship with MEOLUT SGB commissioning and SGB implementation; and

g) a view that:

- the key controversial issue was related to the implementation schedule of Ground Segment changes,
- approval of the proposed revisions to document C/S T.020 was required, in particular, for the ELT(DT) implementation, to make available the latest version of the MEOLUT commissioning standard for further discussion of the SGB implementation.

3.2.67 The Council **NOTED** the concerns expressed by Canada, France and Russia regarding the possible impact that approving proposed SGB-related revisions to document C/S T.020, which could be understood to include immediate mandatory commissioning to SGB standards, would have on the upcoming MEOLUT commissioning effort towards the declaration of MEOSAR IOC, considering that SGBs were still under development and that the implementation timeline of SGB-related Ground Segment changes still required further consideration.

3.2.68 The Council **NOTED** the views of the USA that:

a) ELT(DT) (SGB and FGB) implementation should not be required for the partial re-commissioning to enter MEOSAR IOC;

b) SGB specifications as well were not required for partial re-commissioning to enter MEOSAR IOC;

c) it was in the best interest of the Programme for Ground Segment Providers to try to implement SGB and ELT(DT) (SGB and FGB) specifications as soon as possible; and

d) if ELT(DT)s and SGBs were implemented in the Ground Segment, data should be filtered until TACs had been issued and the Council had decided to support the operation of these new beacons.

3.2.69 The Council **NOTED** general agreement:

a) to the changes proposed in the Red Book version of document C/S T.020;

b) that the approval of document C/S T.020 should not be understood to imply an obligation to implement and commission an SGB capability in the MEOLUT, nor should it imply that SGB capability in the MEOLUT could not be commissioned based on the current standards, which would not preclude further changes to document C/S T.020; and

c) that the implementation and commissioning timeline was a matter pending further Council decision.

3.2.70 The Council **DECIDED** to invite Participants to work further on the implementation timeline for the Ground Segment and assess the possible impact of such implementation on the preparations for MEOSAR IOC entrance.

3.2.71 The Council **DECIDED** to approve Issue 2 of document C/S T.020, "Cospas-Sarsat MEOLUT Commissioning Standard" as submitted, with additional amendments proposed in document CSC-59/OPN/3/6-Corr.1, and as provided at Annex 15 to this Summary Record.

DOCUMENT C/S G.005

3.2.72 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 5.1.4) that the Council approve the draft amendments to document "Cospas-Sarsat Guidelines on 406 MHz Beacon Coding, Registration, and Type Approval" provided at Annex 10 to the JC-31 Report as document C/S G.005, Draft Issue 3.

3.2.73 The Council **DECIDED** to approve Issue 3 of document C/S G.005, "Cospas-Sarsat Guidelines on 406 MHz Beacon Coding, Registration, and Type Approval" as submitted to the Council.

DOCUMENT C/S T.001

3.2.74 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 5.1.74) that the Council approve the draft amendments to document "Specifications for Cospas-Sarsat 406 MHz Distress Beacons" provided at Annex 15 to the JC-31 Report as document C/S T.001, Issue 4 – Draft Revision 2.

3.2.75 The Council **DECIDED** to approve Issue 4 – Revision 2 of document C/S T.001, "Specifications for Cospas-Sarsat 406 MHz Distress Beacons" as submitted to the Council.

DOCUMENT C/S T.018

3.2.76 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 5.2.35) that the Council approve the draft amendments to document "Specifications for Second Generation Cospas-Sarsat 406 MHz Distress Beacons" provided at Annex 24 to the JC-31 Report as document C/S T.018, Issue 1 – Draft Revision 2.

3.2.77 The Council also **NOTED** that the matter of additional amendments to Issue 1 – Draft Revision 2 of document C/S T.018, "Specifications for Second-Generation Cospas-Sarsat 406-MHz Distress Beacons", was further discussed in documents CSC-59/OPN/4/5 (France/USA) and CSC-59/OPN/4/6-Rev.1 (USA) (see section 4.3.13 of this Summary Record).

3.2.78 The Council **DECIDED** to approve Issue 1 – Revision 2 of document C/S T.018, "Specifications for Second Generation Cospas-Sarsat 406 MHz Distress Beacons", as submitted to the Council, with additional amendments as provided in Annex 13 to this Summary Record.

DOCUMENT C/S T.007

3.2.79 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 6.1.41) that the Council approve the draft amendments to document "Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard" provided at Annex 18 to the JC-31 Report as document C/S T.007, Issue 5 – Draft Revision 1.

3.2.80 The Council **NOTED** from document CSC-59/OPN/3/9-Corr.1 (Secretariat) the additional amendments to document C/S T.007, and that:

a) JC-31 recommended the Council approve the draft amendments to document C/S T.007, "Cospas-Sarsat 406 MHz Distress Beacons Type Approval Standard", as proposed in Annex 18 to the JC-31 Report; and

b) additional amendments to document C/S T.007 were proposed after JC-31 that included changes to the value of bits to be monitored during the UTC test, as described in section A.3.8.8.2 step "o" of document C/S T.007.

3.2.81 The Council **DECIDED** to approve Issue 5 – Revision 1 of document C/S T.007, "Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard" as submitted to the Council with additional amendments proposed in document CSC-59/OPN/3/9-Corr.1, as provided at Annex 10 to this Summary Record.

DOCUMENT C/S T.008

3.2.82 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 6.3.20) that the Council approve the draft amendments to document "Cospas-Sarsat Acceptance of 406 MHz Beacon Type Approval Test Facilities" provided at Annex 19 to the JC-31 Report as document C/S T.008, Issue 2 – Draft Revision 2.

3.2.83 The Council **DECIDED** to approve Issue 3 of document C/S T.008, "Cospas-Sarsat Acceptance of 406 MHz Beacon Type Approval Test Facilities" as submitted to the Council.

DOCUMENT C/S A.001

3.2.84 The Council **NOTED**:

a) the Joint Committee recommendation (JC-31 Report, section 7.2.15) that the Council approve the amendments to document "Cospas-Sarsat Data Distribution Plan" as provided at Annex 4 to the JC-31 Report as document C/S A.001, Draft Issue 8;

b) from document CSC-59/OPN/3/5 (Russia) additional draft amendments to document C/S A.001 (Red Book) regarding clarification of the communication between CMC and INMCC and backup procedures; and

c) from documents CSC-59/OPN/4/6-Rev.1 (USA) and CSC-59/OPN/4/15 (Secretariat) additional draft amendments to document C/S A.001 (Red Book) addressing the RLS functionality for SGBs (see section 4.3.17 of this Summary Record) and MCC ground distribution of RLS-beacon distress alerts (see section 4.2.16 of this Summary Record).

3.2.85 After discussion and agreement of these proposed amendments to document C/S A.001, the Council **DECIDED** to approve Issue 8 of document C/S A.001, "Cospas-Sarsat Data Distribution Plan" as submitted to the Council with the additional amendments provided at Annex 4 to this Summary Record.

DOCUMENT C/S A.002

3.2.86 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 7.2.16) that the Council approve the amendments to document "Cospas-Sarsat Mission Control Centres Standard Interface Description" as provided at Annex 5 to the JC-31 Report as document C/S A.002, Draft Issue 7.

3.2.87 The Council **NOTED** from document CSC-59/OPN/4/8 (USA) clarification that, since the existing MEOLUTs did not produce DOA interferer solutions, and since it was not clear what an SGB interferer might actually be, there was no need that the new message SIT 341 be introduced in the new issue of C/S A.002, and was thus removed from the associated JC-31 Annex when editing the Red Book version submitted to the Council.

3.2.88 The Council **DECIDED** to approve Issue 7 of document C/S A.002, "Cospas-Sarsat Data Distribution Plan", as submitted to the Council.

DOCUMENT C/S A.003

3.2.89 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 7.2.17) that the Council approve the amendments to document "Cospas-Sarsat System Monitoring and Reporting" as provided at Annex 6 to the JC-31 Report as document C/S A.003, Draft Issue 3.

3.2.90 The Council **DECIDED** to approve Issue 3 of document C/S A.003, "Cospas-Sarsat System Monitoring and Reporting" as submitted to the Council.

DOCUMENT C/S A.005

3.2.91 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 7.2.18) that the Council approve the amendments to document "Cospas-Sarsat Mission Control Centre (MCC) Performance Specification and Design Guidelines" as provided at Annex 7 to the JC-31 Report as document C/S A.005, Draft Issue 5; and

3.2.92 The Council **NOTED** from document CSC-59/OPN/4/8 (USA) additional proposed amendments to the Red Book of document C/S A.005.

3.2.93 After discussion and agreement of these proposed amendments to document C/S A.005, the Council **DECIDED** to approve Issue 5 of document C/S A.005, "Cospas-Sarsat Mission Control Centre (MCC) Performance Specification and Design Guidelines" as submitted to the Council with the additional amendments provided at Annex 5 to this Summary Record.

DOCUMENT C/S A.006

3.2.94 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 7.2.19) that the Council approve the amendments to document "Cospas-Sarsat Mission Control Centre Commissioning Standard" as provided at Annex 8 to the JC-31 Report as document C/S A.006, Draft Issue 5; and

3.2.95 The Council **NOTED** from document CSC-59/OPN/4/8 (USA) additional proposed amendments to the Red Book of document C/S A.006.

3.2.96 After discussion and agreement of these proposed amendments to document C/S A.006, the Council **DECIDED** to approve Issue 5 of document C/S A.006, "Cospas-Sarsat Mission Control Centre Commissioning Standard" as submitted to the Council with the additional amendments provided at Annex 6 to this Summary Record.

DOCUMENT C/S G.007

3.2.97 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 7.6.8) that the Council approve the amendments to document "Handbook on Distress Alert

Messages for Rescue Coordination Centres (RCCs), Search and Rescue Points of Contact (SPOCs) and IMO Ship Security Competent Authorities" as provided at Annex 11 to the JC-31 Report as document C/S G.007, Issue 2 – Draft Revision 1.

3.2.98 The Council **DECIDED** to approve Issue 2 - Revision 1 of document C/S G.007, "Handbook on Distress Alert Messages for Rescue Coordination Centres (RCCs), Search and Rescue Points of Contact (SPOCs) and IMO Ship Security Competent Authorities" as submitted to the Council.

DOCUMENT C/S T.022

3.2.99 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 8.4.9) that the Council approve the draft amendments to document "Cospas-Sarsat MEOSAR Reference Beacon Network Design Guidelines" provided at Annex 28 to the JC-31 Report as document C/S T.022, Draft Issue 1.

3.2.100 The Council **DECIDED** to approve Issue 1 of document C/S T.022, "Cospas-Sarsat MEOSAR Reference Beacon Network Design Guidelines" as submitted to the Council.

DOCUMENT C/S R.018

3.2.101 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 10.1.15) that the Council approve the amendments to document "Cospas-Sarsat Demonstration and Evaluation Plan for the 406 MHz MEOSAR System" provided at Annex 13 to the JC-31 Report as document C/S R.018, Issue 2 – Draft Revision 5.

3.2.102 The Council **DECIDED** to approve Issue 2 – Revision 5 of document C/S R.018, "Cospas-Sarsat Demonstration and Evaluation Plan for the 406 MHz MEOSAR System" as submitted to the Council.

PROGRAMME VIDEOS

3.2.103 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 12.2.1) that the Council continue to fund the video project in 2018 to allow:

a) production of updates and improvements to the training videos, which was expected to benefit from further Participant input as the videos entered into frequent use, and as the System evolved;

b) creation of a Cospas-Sarsat YouTube channel to include all videos produced to date as well as a catalogued library of video footage that was collected in support of the creation of the training videos;

c) completing production of the video-minis (FAQs), as modified by the Joint Committee;

d) producing versions of the 12-minute end-to-end video and the short "commercial" style video subtitled in French and Russian; and

e) development of a new webpage on the Cospas-Sarsat website in which YouTube links would be embedded for the training videos, to allow statistical tracking of use of the videos, and easy access for Participants to the latest versions.

3.2.104 The Council further **NOTED** that the matter of the Programme videos was further discussed in document CSC-59/OPN/11/2 (Secretariat) under section 11.4 of this Summary Record.

FUTURE MEETINGS

3.2.105 The Council **NOTED** the Joint Committee recommendation (JC-31 Report, section 14.15) recommendation that the:

a) Council consider favourably the invitation from the EC to host TG-2/2018;

b) Council consider favourably the invitation from the United Arab Emirates to host JC-32;

c) Council approve the 2018/2019 meeting schedule at Annex 37 to the JC-31 Report;

d) Council approve the terms of reference for a TG-1/2018, as outlined at Annex 38 to the JC-31 Report;

e) Council authorize the TG-1/2018 chair to allocate documents as appropriate for consideration by splinter groups without the documents needing to be introduced in a plenary session of the meeting; and that the chair should consult as needed in advance about such allocations and ensure that the allocation scheme was properly notified to and approved by the Task Group through its work plan;

f) Council consider the topics for a TG-2/2018, as outlined at Annex 39 to the JC-31 Report, decide terms of reference for the meeting, and decide whether the chair of the TG-2/2018 Meeting should be authorized to allocate documents and manage that meeting as was proposed for TG-1/2018 in (e) above; and

g) Parties confirm no later than 30 November 2017 the dates and terms of reference for a TG-1/2018.

3.2.106 The Council further **NOTED** that the matter of the future Cospas-Sarsat meetings was further discussed in documents CSC-59/OPN/4/7-Rev.1 (UK/RTCM), CSC-59/OPN/10/1-Rev.1 (Secretariat), CSC-59/OPN/10/2 (Secretariat), CSC-59/OPN/10/3 (JC-31) and CSC-59/OPN/10/8-Rev.1 (Secretariat) in response, CSC-59/OPN/10/4 (JC-31), CSC-59/OPN/10/5 (JC-31) and CSC-59/OPN/10/6 (USA) in response, CSC-59/OPN/10/7-Corr.1 (USA), CSC-59/OPN/10/7-Corr.1 (USA), CSC-59/OPN/10/9 (France), CSC-59/OPN/10/10 (Canada/France/Russia/USA), CSC-59/OPN/Inf.10 (Qatar), and CSC-59/OPN/Inf.28 (Secretariat) under section 10 of this Summary Record.

3.3 Ground Segment Changes

CRITICAL CHANGES TO THE GROUND SEGMENT

3.3.1 The Council **NOTED** from document CSC-59/OPN/3/2 (Secretariat):

a) a review of previous Council guidance on the tracking of implementation of critical changes to the Ground Segment, noting that the volume of changes to the System proposed at the JC-30 and JC-31 Meetings had overwhelmed the mechanism described in document C/S P.011 to appropriately label and track the status of these changes;

b) that the list of changes annexed to the JC-31 Report (and to the Council input document) was incomplete, as time did not permit appropriately addressing the criticality and implementation timeline for changes proposed to the System; and

c) JC-31 had requested that the Council review the System configuration management process and advise as appropriate.

3.3.2 The Council further **NOTED** from document CSC-59/OPN/3/2 the recommendations that it:

a) review and revise, as appropriate, the list of Ground Segment equipment modifications agreed at JC-31, presented at Annex 31 to the JC-31 Report, as modified by the Secretariat in document CSC-59/OPN/3/2, and determine appropriate implementation dates for each change;

b) confirm, specifically, the revised implementation dates for Ground Segment changes to support the RLS, i.e., June 2018 for nodal MCCs and December 2018 for all MCCs;

c) confirm the need for the Ground Segment equipment modifications agreed at JC-31 as presented, modified as necessary, specifically to ensure completeness and to address the items that were incomplete;

d) establish and endorse the implementation schedule and criticality for each approved change;

e) review and revise, as appropriate, the change management policy in document C/S P.011 (Programme management policy), with a view toward establishing a viable configuration management system and change-tracking process for the rapidly evolving Ground Segment; and

f) provide the Secretariat with an appropriate process to track the implementation status of agreed critical changes to the Ground Segment, in compliance with Programme management policies.

3.3.3 The Council **NOTED** from document CSC-59/OPN/3/10 (USA), provided in response to document CSC-59/OPN/3/2, that:

a) the process for tracking Ground Segment changes in the Cospas-Sarsat System had become increasingly difficult due to the number of changes agreed upon at JC-30 and JC-31, as highlighted in document CSC-59/OPN/3/2;

b) the USA proposed a new methodology and guidelines for tracking changes in the Ground Segment;

c) the USA provided an associated change tracking spreadsheet, completed for all changes output from JC-31, and using the new proposed methodology;

d) the changes proposed by the USA largely involved a rearrangement of information, following the design criteria described in the document;

e) during the preparation of the new spreadsheet, some modifications to the list of changes contained in document CSC-59/OPN/3/2 were made; and

f) a proposal that the Secretariat provide versions of System specifications both before (pre-Red-Book) and after each Council meeting showing all agreed changes to each document, using the MS Word "track changes" feature.

3.3.4 The Council further **NOTED** from document CSC-59/OPN/3/10 that with respect to change management procedures:

a) updates and/or new additions to the proposed change tracking worksheets should no longer be attempted as part of the Joint Committee report, but rather be collected after the Joint Committee meeting and provided as input to the following Open Council in a working paper for approval in conjunction with the associated Red Book (and pre-Red-Book) versions of the specifications; and

b) while implementation due dates might be discussed, documented and/or agreed by the Joint Committee, the Council was responsible for finalizing the required implementation dates, in conjunction with approval of the Red Book documents.

3.3.5 The Council **NOTED** from discussion of documents CSC-59/OPN/3/2 and CSC-59/OPN/3/10 that the Secretariat had reviewed the proposal of the USA and coordinated with the USA to develop a path forward, including that:

a) the Secretariat would make versions of System documents available that provided Ground Segment specifications, with tracked changes shown, for all changes made to the document in the prior meeting cycle, i.e., Task Groups, Joint Committee, and Council;

b) these marked-up System documents would be made initially available after the Joint Committee meeting, then modified to include any changes to the documents agreed at the Council;

c) the changes tracked should be limited to those that might imply a software or hardware change to Ground Segment equipment, which would require that guidance be developed on specific types of changes that should be tracked, and on which type of changes could be considered editorial;

d) given the wholesale changes to System documents made over the past two years, generating Red Books with tracked changes shown for the documents output from

the JC-30 and JC-31 Meetings would be a huge level of effort and likely could not be accomplished in a timeframe that would allow these to be useful;

e) at the JC-32 meeting, the Secretariat would prepare, on a best-effort basis, as an initial trial of this proposed methodology, System documents with tracked changes shown for documents C/S A.001, C/S A.002, C/S A.003, C/S T.002, C/S T.009 and C/S T.019, and could include other documents as necessary, to be provided as annexes to the JC-32 Report;

f) following the JC-32 meeting, interested participants would prepare the list of agreed changes to the Ground Segment using the spreadsheet format proposed by the USA in document CSC-59/OPN/3/10;

g) this effort would be facilitated if Participants included in input documents to Task Groups and Joint Committee meetings clearly identified changes using the criteria provided by the USA in document CSC-59/OPN/3/10; and

h) an additional and potentially quite valuable step would be to consider periodic amendments to the System Level Test (as annexed to document C/S A.003) to include processes which would allow monitoring of the implementation of approved critical changes to the Ground Segment.

3.3.6 The Council further **NOTED** from discussion of documents CSC-59/OPN/3/2 and CSC-59/OPN/3/10 that:

a) there was general agreement with the proposed means of tracking changes to the Ground Segment in a spreadsheet format, developed based on versions of System specification documents marked up in tracked changes;

b) the methodology provided by the USA addressed immediate concerns, and if adopted, would require changes to document C/S P.011 (Programme management policy); and

c) the efforts of the USA and the Secretariat to develop this list and its new format were appreciated, however, the actual contents of the new spreadsheet, including the stated implementation deadlines, required further consideration.

3.3.7 The Council further **NOTED** from discussion of documents CSC-59/OPN/3/2 and CSC-59/OPN/3/10 that:

a) it was clear that establishing an agreed list of critical changes to the Ground Segment and associated implementation dates was a very complicated matter due to:

- the number of changes involved,
- the number of categories or classes of changes spanned,
- potential interpretations of the implementation due dates with respect to the specifics of actually installing upgrades and the subsequent potential recommissioning efforts that would follow; and

b) the matter was further complicated in that this work should align with System implementation milestones, most notably the declaration of entrance to MEOSAR IOC.

3.3.8 The Council further **NOTED** from discussion of documents CSC-59/OPN/3/2 and CSC-59/OPN/3/10 that:

a) there was a connection between implementation due dates and commissioning requirements; however,

b) commissioning requirements associated with MEOSAR IOC should not be inextricably tied to other implementation dates, most notably SGB, ELT(DT) or RLS requirements and implementation dates;

c) examples of interplay of commissioning requirements and implementation dates included:

- an MCC undergoing LGM commissioning should not be held back from LGM commissioning because its commissioning was not complete before other classes of changes (e.g., SGB, ELT(DT) or RLS) were completed,
- a nodal MCC or its associated MEOLUT, in preparing to meet full requirements for MEOSAR IOC, should not be held back from commissioning to LGM specifications before being able to complete other classes of changes, as this might not only unnecessarily complicate the commissioning effort in support of MEOSAR IOC, but possibly prolong the servicing of multiple DDRs by the other nodal MCCs and jeopardize or delay MEOSAR IOC declaration;

d) the implementation due dates for the primary RLS changes had already passed, and might well be overcome by events in many cases;

e) it might be useful to note that while the criteria for MEOSAR IOC required that all nodal MCCs and at least one associated MEOLUT needed to be in compliance, the criteria for (FGB or SGB) ELT(DT) readiness (which relied on encoded positions only) could be achieved with as few as four properly located ELT(DT)-capable MEOLUTs that were associated with an ELT(DT)-processing-capable MCC; and

f) the interim alert data distribution procedure for MCCs recommended in document CSC-59/OPN/4/15 would ensure that the respective data would be distributed throughout the System.

3.3.9 The Council **NOTED** general agreement that:

a) the proposed implementation dates were accepted as shown at Annex 16 to this Summary Record, noting that the implementation due dates for a few items were still under discussion;

b) all comments in the spreadsheet that pertained to alternate (earlier) implementation due dates for Nodal MCCs and one associated MEOLUT could be removed, as these dates were not only deemed very challenging, the necessity was not fully agreed;

c) the dates in these comments could be removed to reflect realistic capabilities for implementation; and

d) the proposed spreadsheet design could be further enhanced to include additional information (e.g., a column providing a reference to a class of changes, i.e., RLS, ELT(DT), SGB, etc.).

3.3.10 The Council **DECIDED** to adopt the:

a) spreadsheet format for tracking changes to Ground Segment equipment as proposed by the USA in document CSC-59/OPN/3/10; and

b) modifications to Change Implementation dates recommended by JC-31 as modified during the Council Meeting and reflected in Annex 16 of this Summary Record, noting that the implementation due dates for a few items were still under discussion.

3.3.11 The Council further **NOTED** from discussion of the provision of "pre-Red-Book" (i.e., traditional Red Books with tracked changes shown) as described in document CSC-59/OPN/3/10 that:

a) in addition to the documents (i.e., C/S A.001, C/S A.002, C/S A.003, C/S T.002, C/S T.009 and C/S T.019) proposed by the Secretariat to be provided after the JC-32 meeting in the new pre-Red-Book format, it would be beneficial if the Secretariat could prepare, on a best effort basis, System documents with tracked changes shown for documents C/S T.001, C/S T.007, C/S T.018 and C/S T.021, to be provided as annexes to the JC-32 Report; and

b) assessing the implementation of critical changes by appropriately amending the System Level Test would assist in the configuration management of the System.

3.3.12 The Council **DECIDED** to invite:

a) interested participants and the Secretariat to consider the design of the new spreadsheets as well as the specific implementation due dates and propose amendments, as appropriate, to future Cospas-Sarsat meetings;

b) the Secretariat to make available on the CSC-59 Open Meeting webpage under "Other Documents" the current spreadsheet (i.e., the version developed during the CSC-59 Open Meeting), in Excel format;

c) interested participants to develop changes to document C/S P.011 (Programme management policy) to reflect the new agreed methodology for tracking of agreed changes to the Ground Segment to better provide configuration management of the System;

d) the Secretariat to provide, starting at the JC-32 Meeting, the following System documents in the new pre-Red-Book format (System documents with tracked changes shown): documents C/S A.001, C/S A.002, C/S A.003, C/S T.001, C/S T.002, C/S T.007, C/S T.009, C/S T.018, C/S T.019 and C/S T.021; and

e) interested participants to propose appropriate amendments to the System Level Test in document C/S A.003 to assist in the configuration management of the System

and to aid in assessing the status of implementation of critical changes to the Ground Segment.

4: SPACE SEGMENT, GROUND SEGMENT, BEACON MATTERS AND SYSTEM OPERATION

4.1 Space Segment Matters

UPDATES ON COSPAS SATELLITES MISSION

4.1.1 The Council **NOTED** from document CSC-59/OPN/Inf.11 (Russia) and its presentation:

a) that the METEOR-M No.1 satellite, carrying the planned Cospas-13 SAR payload, was launched on 28 November 2017, however, the spacecraft failed to reach its calculated orbit and was considered a loss;

b) that the METEOR-M No.2 satellite was expected to be launched from the "Vostochny" spaceport in the fourth quarter of 2018; and

c) an additional three COSPAS launches had been approved in the Russian Federation's long-term planning budget for space activities.

STATUS OF USA SPACE SEGMENT

4.1.2 The Council **NOTED** from document CSC-59/OPN/Inf.20 (USA) and its presentation:

a) the plan of NOAA to maintain legacy polar satellites in operation to support the Cospas-Sarsat System;

b) information presented regarding the CDARS budget and NOAA's effort to analyze alternative options for launching new polar satellite capabilities or investige how to accelerate progress toward a fully operational MEOSAR system;

c) the planned continued expansion of the DASS satellite constellation and the USA's intent to begin launch of dedicated SAR (L-band) instruments not earlier than 2026;

d) the parallel approach of the USA to densify its MEOSAR ground segment with the addition of new MEOLUTs;

e) that GOES-16 (East), the downlink centre frequency of which had been shifted to 1,544.55 MHz, recently replaced GOES-13; and

f) that GOES-S would be launched on 1 March 2018 to replace GOES-15 (West).

4.1.3 The Council further **NOTED** from presentation of document CSC-59/OPN/Inf.20 that the Polar Scout project would place two CubeSats into LEO Sun Synchronous orbit with a launch planned for the summer of 2018, and that:

a) the exact date of the launch was not available at the time of this Council session, and was dependent on a launch shared with other government and commercial satellites;

b) experimental tests to detect and locate 406-MHz beacons would be conducted with the payloads; and

c) even if this project was not expected to provide operational data into the Cospas-Sarsat System, and relied on a separate test ground segment, if the data appeared to be of value after the test campaign, and some existing primary LEOSAR payloads were to be lost, this demonstration capability might become useable operationally for distress alert distribution to the Cospas-Sarsat Ground Segment via the USMCC.

COSPAS-SARSAT SPACE SEGMENT STATUS

4.1.4 The Council **NOTED** from document CSC-59/OPN/Inf.1 (Secretariat) the general information provided on the status of the LEOSAR, GEOSAR and MEOSAR space segments and the updated spacecraft tentative launch schedules as of 1 January 2018, also available on the Cospas-Sarsat website.

4.1.5 The Council further **NOTED** from the presentation of document CSC-59/OPN/Inf.1 that:

a) some disruptions were still affecting the LEOSAR space segment;

b) Electro-L No.1 had been decommissioned on 1 June 2017;

c) MSG-1 satellite had been relocated at 41.5° E, moving on an elliptical orbit;

d) in June 2017, INSAT-3DR had been declared at IOC and GSAT-17 had been successfully launched;

e) the Cospas-Sarsat identification for the four Galileo SAR payloads launched on 12 December 2017 would be C/S ID 421, C/S ID 425, C/S ID 427 and C/S ID 431 for the satellites GSAT-0215, GSAT-0216, GSAT-0217 and GSAT-0218 respectively.

f) the next Galileo satellite launches would occur in July 2018 and then in the fourth quarter of 2020; and

g) in March 2018, at the end of the MSG replacement process currently in progress, MSG-2 would be placed in in-orbit storage at 3.5° E.

INFORMATION ON SAR/BDS PAYLOAD TECHNOLOGY

4.1.6 The Council **NOTED** from document CSC-59/OPN/Inf.21 (China):

a) that at JC-31, China had provided two documents (JC-31/9/2 and JC-31/9/3) on the new BDS MEOSAR repeater technology and on the BDS MEOSAR payload system development plan;

b) that JC-31 had discussed and considered the two reports and agreed that the technical information on SAR/BDS could be included in document C/S R.012, “Cospas-Sarsat 406 MHz MEOSAR Implementation Plan”;

c) additional information on the SAR/BDS receive and transmit antenna patterns, and on transmit EIRP; and

d) that the specific program which would provide BDS constellation orbit data was still under discussion.

GEOSAR METEOSAT SATELLITES RELOCATION

4.1.7 The Council **NOTED** from document CSC-59/OPN/Inf.13 (France) information provided on the Meteosat-11 (MSG-4), Meteosat-10 (MSG-3), Meteosat-9 (MSG-2) relocation processes and, in particular, that:

a) MSG-4 would start drifting on 5 February until 13 February 2018 to move from 3.4° W to 0°, with a final orbital inclination expected to be 1.38°;

b) MSG-3 would start drifting on 8 February until 27 February 2018 to move from 0° to 9.5° E, with a final orbital inclination expected to be close to 0°; and

c) MSG-2 would start drifting on 21 February until 5 March 2018 to move from 9.5° E to 3.5° E and be stored as an in-orbit spare.

SAR GALILEO SPACE SEGMENT STATUS

4.1.8 The Council **NOTED** from document CSC-59/OPN/Inf.18-Corr.1 (EC) information provided on the updated status of the SAR/Galileo space segment and, in particular, that:

a) the first 10 SAR/Galileo repeaters had been declared at FOC and the associated commissioning reports were approved at CSC-57 in December 2016;

b) an additional launch of Galileo satellites took place on 17 November 2016 carrying four satellites equipped with SAR payloads (GSAT0207 (C/S ID 407), GSAT0212 (C/S ID 403), GSAT0213 (C/S ID 404), and GSAT0214 (C/S ID 405)) which had been through the commissioning process according to the Space Segment Commissioning Standard;

c) at JC-31, the European Commission presented the Commissioning Reports for the six SAR repeaters embarked on-board the Galileo satellites GSAT0207, GSAT0210, GSAT0211, GSAT0212, GSAT0213 and GSAT0214, which were recommended for approval at this Council;

d) on 12 December 2017, the Galileo Programme had successfully launched four additional Galileo satellites (GSAT0215 (C/S 421, A3), GSAT0216 (C/S 425, A7), GSAT0217 (C/S 427, A1), and GSAT0218 (C/S 431, A4)), which would be tested during Q1 and Q2 2018, and would be operational by July 2018 with the view that the commissioning reports be presented at JC-32 in October 2018 for review;

e) the last launch of the set of 22 Galileo FOC satellites would be expected to take place in July 2018; and

f) in December 2017, the Galileo Programme had decided to change the Galileo satellite GSAT0204 to "In-Orbit Spare" with a view of reactivating the satellite for the Galileo FOC service milestone in 2020.

4.2 Ground Segment Matters

GROUND SEGMENT STATUS

4.2.1 The Council **NOTED** from document CSC-59/OPN/Inf.2 (Secretariat) the information provided on the status of the LEOSAR, GEOSAR and MEOSAR ground segments as at 1 January 2018.

4.2.2 The Council further **NOTED** from document CSC-59/OPN/Inf.2 (Secretariat) and its presentation:

a) a list of changes or main information for the period from 1 January to 31 December 2017, including:

- the return to service of the Algerian LUTs (6051, 6052, and 6053) and MCC (6050),
- the Abuja MCC (6570) status which remained "commissioned, not operational" (CNO), and configured as a SPOC of the SPMCC since June 2016,
- the decommissioning of the New Zealand LEOLUT (5121) and GEOLUTs (5122 and 5123) in Wellington/Morison, the latter being replaced by new GEOLUTs (5124 and 5125) at Goudies Road,
- the installation of a second GEOLUT (4707) in Abu Dhabi, equipped with an active-tracking-capable antenna for tracking MSG-1; and

b) implementation plans as provided by Ground Segment Providers, including:

- the development of the Lusail LEOLUT (4661), GEOLUT (TBD) and MCC (4660) in Qatar,
- the Russian development of a LEOLUT (2731) in Moscow, and three additional GEOLUTs.

4.2.3 The Council further **NOTED** from document CSC-59/OPN/Inf.2 (Secretariat) and its presentation the information on the MEOSAR ground segment:

a) status, as of 1 January 2018, of the:

- 20 already-built MEOLUTs (7 commissioned at CSC-57, 6 proposed for commissioning at CSC-59, and 7 available for testing purposes),
- 16 already-built LGM MCCs (2 commissioned at CSC-57, 1 proposed for commissioning at CSC-59, and 13 available for testing purposes),
- commissioning plan for the upcoming years; and

b) implementation plans as provided by Ground Segment Providers, including the installation of 18 MEOLUTs and 15 LGM MCCs scheduled between 2018 and

2020, and the consideration of an additional 4 MEOLUTs and 3 LGM MCCs in the near future.

4.2.4 The Council also **NOTED** from document CSC-59/OPN/Inf.2 (Secretariat):

a) that, throughout the year, updated status was available on the Cospas-Sarsat website; and

b) the invitation to Participants to provide amendments and corrections to the Secretariat for further inclusion in the Cospas-Sarsat documentation and website.

SAR GALILEO GROUND SEGMENT STATUS

4.2.5 The Council **NOTED** from document CSC-59/OPN/Inf.18-Corr.1 (EC) that:

a) the SAR/Galileo MEOLUT commissioning reports according to the MEOSAR EOC criteria were formally approved by the Council in December 2017;

b) the European Commission (EC) constantly monitored the performance of the MEOLUTs over the European Coverage Area;

c) the EC intended to upgrade its MEOLUTs to meet the MEOSAR IOC requirements once these were confirmed by the Council, and would perform the required delta commissioning; and

d) in June 2017, the European Commission launched the procurement process (to be awarded in May 2018) for the establishment of a new SAR/Galileo facility on Reunion Island, including a MEOLUT deployment planned for the end of 2019, a reference beacon and a calibration beacon.

JAPAN'S MEOSAR STATUS

4.2.6 The Council **NOTED** from document CSC-59/OPN/Inf.17 (Japan) that:

a) Japan had submitted a MEOLUT commissioning report to JC-31 and was confirmed as being ready for MEOSAR EOC; however

b) with regard to the Japanese DCA, it was also determined that the Japan MEOLUT with four channels could not cover all of its area of interest (i.e., was limited to a range of 2,000 km); then

c) Japan intended to carry out the MEOLUT commissioning test with six channels in order to extend its DCA and to submit the MEOLUT commissioning report to JC-32;

d) the LGM-MCC commissioning pre-integration test with the USA was in progress; and

e) a MEOSAR reference beacon would be set up in Japan by the second quarter of 2018 with the following characteristics:

- frequency: 406.034 MHz,
- location: Naha City (distance from Japan MEOLUT, about 1,500 km),

- linear antenna polarization.

LGM NMCC COMMISSIONING

4.2.7 The Council **NOTED** from document CSC-59/OPN/4/1-Corr.1 (France) the results of further tests that were requested by JC-31 in order to complete the LEOSAR/GEOSAR/MEOSAR (LGM) capable Norwegian Mission Control Centre (NMCC) commissioning and that:

a) the LGM NMCC commissioning report was updated to reflect the results of additional tests conducted and was provided for review by the Council;

b) the FMCC had verified the correct processing of RLS SIT messages by the NMCC through specific tests as well as D&E testing, where the NMCC took part in the D&E O-5 test campaign and generated Return Link Message (RLM) requests to the FMCC for beacons that were located in the Norwegian service area;

c) the minor format issue in SIT 185 messages identified at JC-31 was corrected as verified in recent tests; and

d) the LGM NMCC was successful in its commissioning against Cospas-Sarsat standards, either by measurement, verification, declaration or a combination of verification and declaration.

4.2.8 The Council further **NOTED** from document CSC-59/OPN/4/1-Corr.1 the recommendation that it approve the commissioning of the LGM NMCC and its operational use of LEOSAR, GEOSAR and MEOSAR data.

4.2.9 The Council **NOTED** from discussion of document CSC-59/OPN/4/1-Corr.1:

a) that the commissioning of the LGM AUMCC by the USMCC was underway, and there was concern that the software issues noted by the USA in the LGM AUMCC might also affect the commissioning of the LGM NMCC by the FMCC, noting that Australia and Norway were supported by the same vendor;

b) that the AUMCC and NMCC might not be operating under the same software version, however the matter would be further investigated at a technical level and should not affect the commissioning of the new NMCC; and

c) general agreement to approve the commissioning of the LGM NMCC and offer its congratulations to the FMCC and NMCC for this significant effort.

4.2.10 The Council **DECIDED** to approve the commissioning of the new LGM NMCC into the Cospas-Sarsat System.

QATAR GROUND SEGMENT COMMISSIONING

4.2.11 The Council **NOTED** from document CSC-59/OPN/Inf.9 (Qatar (State of)) that the draft Qatar ground segment commissioning plan was under preparation by the QAMCC in cooperation with the nodal SPMCC and the vendor.

ANNUAL SYSTEM LEVEL TEST

4.2.12 The Council **NOTED** from document CSC-59/OPN/4/9 (USA) information regarding the 2018 Annual System Level Test and that:

a) test results were normally analysed for MCCs, LEOLUTs and GEOLUTs as part of the Annual System Test, as specified in document C/S A.003;

b) the System test was currently designed to analyse the performance of LEOSAR/GEOSAR (LG) MCCs, not LEOSAR/GEOSAR/MEOSAR (LGM) MCCs; and

c) LG MCCs were expected to be upgraded to LGM capability by December 2018.

4.2.13 The Council further **NOTED** from document CSC-59/OPN/4/9 that given the significant amount of time and effort that Ground Segment Operators would expend in 2018 commissioning LGM MCCs and implementing other critical changes to the Ground Segment (see Annex 16 to this Summary Record), the recommendation that it:

a) decide that the reporting of 2018 annual System test results would not be required for MCCs (LG or LGM), but would still be required for LEOLUTs and GEOLUTs; and

b) notify Ground Segment Operators accordingly.

4.2.14 The Council **NOTED** general agreement with the proposal of the USA as stated in document CSC-59/OPN/4/9.

4.2.15 The Council **DECIDED** that the reporting of 2018 annual System test results would not be required for MCCs (LG or LGM) but would still be required for LEOLUTs and GEOLUTs.

DISTRIBUTION OF RLS BEACON AND ELT(DT) DISTRESS ALERTS

4.2.16 The Council **NOTED** from document CSC-59/OPN/4/15 (USA/Secretariat) a proposal to include interim procedures in document C/S A.001 to allow global distribution of FGB RLS-capable-beacons and ELT(DT) distress alerts, as well as notifications of FGB RLS-beacon alerts to the RLSP, even if some MCCs were yet to be upgraded to properly handle these new beacon message protocols, and that:

a) the Ground Segment was uniquely suited to distribute distress alerts worldwide to relevant SAR authorities based on the alert location;

b) the global distribution of alerts for new first-generation beacons (FGBs) with RLS capabilities and ELT(DT)s were two key short-term evolutions of the Programme;

c) there was an urgent need for all MCCs to be upgraded to properly process the new FGB RLS-capable-beacon protocol, the implementation of which was recommended in MCCs as a "critical" change, to be completed by June 2018 for nodal MCCs and by December 2018 for other MCCs;

d) unless all MCCs were updated in time for the FGB RLS-capable-beacon and ELT(DT) protocols, the availability of FGB RLS-capable beacons and ELT(DT)s to users might need to be delayed; and

e) in view of the numerous critical changes to be implemented in MCCs in the short term, some MCCs might experience delays in implementing the necessary updates required for the critical changes related to FGB RLS-capable beacons and ELT(DT)s.

4.2.17 The Council also **NOTED** from document CSC-59/OPN/4/15 that:

a) a procedure had been defined in section 3.7.5 of document C/S A.001 to allow for the distribution of MEOSAR alerts to MCCs that were not yet commissioned with a LEOSAR/GEOSAR/MEOSAR-capability, which provided a satisfactory transition for the transmission of MEOSAR alerts to the relevant SAR authorities, even for destination MCCs that might not have been upgraded for the distribution of MEOSAR alerts;

b) in section 3.7.6 of document C/S A.001, a similar approach had been defined for the distribution of the second-generation-beacon (SGB) alerts to MCCs that were only FGB-capable; and

c) to allow marketing/distribution of the beacons according to established schedules and ensure the proper distribution of the associated alert data, similar interim procedures were proposed for MCCs to distribute FGB RLS-capable-beacon and ELT(DT) distress alerts to MCCs that were not upgraded to automatically process these protocols.

4.2.18 The Council further **NOTED** from document CSC-59/OPN/4/15 that:

a) regarding the FGB RLS-capable-beacon protocol, not only were distress alert messages sent to the MCC service area where the beacon was located, but notifications were also sent to the RLSP operated by the FMCC; and

b) to ensure that these notifications be sent, an interim procedure was also proposed for nodal MCCs to send FGB RLS notifications to the RLSP (FMCC), irrespective of the rule that the alert be in their own service area.

4.2.19 The Council **NOTED** from document CSC-59/OPN/4/15 the recommendations that it:

a) review the proposed amendments to document C/S A.001 to define interim distribution procedures for non-upgraded MCCs to receive FGB RLS-capable-beacon and ELT(DT) distress alerts, and for FGB RLS notifications to be sent to the RLSP on their behalf by nodal MCCs; and

b) approve the proposed changes to document C/S A.001.

4.2.20 The Council **NOTED** from discussion of document CSC-59/OPN/4/15:

a) that, although the proposed procedures would allow distribution of FGB RLS-capable-beacon and ELT(DT) distress alerts, participants should aim at meeting the Ground Segment implementation dates proposed for FGB RLS-capable-beacon and ELT(DT) protocols to allow for automated alert data distribution;

b) that the proposed procedures should not be considered a long-term operational procedure but only interim procedures, and while new beacon protocols were being implemented in the Ground Segment; and

c) general agreement to include the proposed interim procedures in document C/S A.001 as provided at Annex 4 to this Summary Record (see section 3.2.85 of this Summary Record).

TRANSITION MANAGEMENT FOR NEW BEACON TYPES

4.2.21 The Council **NOTED** from document CSC-59/OPN/4/16 (France/USA) a proposed methodology to smoothly transition the new beacon types into operational use in the Cospas-Sarsat System and that:

a) new beacons would soon become available in the Cospas-Sarsat System, i.e., FGBs for RLS and ELT(DT)s, and all types of SGBs;

b) there was currently no direct coordination between type-approval activities and the associated upgrades to the Cospas-Sarsat Ground Segment, further complicated by the reality that while Ground Segment upgrades and related commissioning efforts could occur somewhat in parallel, these efforts usually took several months at minimum;

c) the introduction of these new beacons (or beacon capabilities) required careful management to ensure that end-to-end Ground Segment testing could be performed without associated data being prematurely distributed as operational distress alerts, and that beacon manufacturers and owners clearly understood their responsibilities;

d) solutions that had been considered to address this matter included:

- Cospas-Sarsat issuing a "provisional" type-approval certificate (TAC) to beacon manufacturers, who would then provide clear documentation to beacon owners indicating that any beacon with this TAC could not be activated in an operational scenario until approved for operational use by a Council declaration,
- MCC and LUT specification documents being modified to include a configurable control mechanism to filter all alert data associated with a given new beacon type or capability, to prevent the data from reaching RCCs (and SPOCs), again, until approved for operational use by the Council declaration,
- MCC specifications being modified to include interim procedures that would require MCCs that had the capability, to process and distribute alert data associated with a given new beacon type or capability to MCCs that were not similarly capable, similar to procedures recommended in document CSC-59/OPN/4/15; and

e) the matter should be further evaluated at the earliest appropriate Cospas-Sarsat meeting in 2018.

4.2.22 The Council also **NOTED** from document CSC-59/OPN/4/16 the recommendations that it:

a) note the need to ensure that there was a managed operational transition of new beacon types and capabilities within the System;

b) invite interested Participants and the Secretariat to develop procedures and modifications to System documents to ensure a smooth transition when new beacon types (or beacons with new capabilities) that required modifications to Ground Segment specifications (i.e., Cospas-Sarsat documents C/S A.001, C/S A.002, C/S A.003, C/S A.005, C/S T.002, C/S T.009, and C/S T.019) were introduced, making certain that at the minimum:

- end-to-end Ground Segment testing could occur,
- associated data was not prematurely distributed as operational distress alerts,
- beacon manufacturers and owners had a clear understanding of their responsibilities; and

c) decide to adopt the proposed changes provided in document CSC-59/OPN/4/15.

4.2.23 The Council **NOTED** from discussion of document CSC-59/OPN/4/16 the views that:

a) it was in everybody's best interest to put new types of beacons on the market before global coverage, and that, for example, beacons might be made available on a regional acceptance basis when coverage would be achieved in this region, and that Cospas-Sarsat Participants should also consider this alternate methodology as part of the solutions that had to be considered when transitioning to the operation of new beacon types;

b) regional acceptance was used in many products currently sold on the market;

c) if regional acceptance was to be considered, the beacon user manual would need to clearly indicate any geographical limitations;

d) the Cospas-Sarsat Programme needed to support the commercial sector, but also needed to take into consideration operational requirements; and

e) if regional acceptance was to be considered as a possible solution to help the transition to new beacon types, Participants would also need to consider the risks associated with the regional sale of these products, especially considering that beacons could be sold or re-used in other parts of the world and that unlike many commercial products where regional acceptance was used, Cospas-Sarsat beacons were part of a safety-of-life system.

4.2.24 The Council also **NOTED** from discussion of document CSC-59/OPN/4/16 that:

a) RTCM was willing to work with the USA and France to further develop methodologies to manage a smooth transition to new Cospas-Sarsat beacon types including the use of the regional acceptance solution; and

b) the development of procedures and modifications to System documents to ensure a smooth transition when new beacon types that required modifications to Ground Segment specifications were introduced needed to be further discussed at the upcoming EWG-1/2018, TG-1/2018 and JC-32 Meetings.

4.2.25 The Council further **NOTED** that the recommendations of document CSC-59/OPN/4/16 to adopt the proposed changes in document CSC-59/OPN/4/15 were reported in section 4.2.22 of this Summary Record.

4.2.26 The Council **DECIDED** to:

a) invite interested participants and the Secretariat to develop methodologies, procedures and associated modifications to System documents to ensure a smooth transition when new beacon types (or beacons with new capabilities) that required modifications to Ground Segment specifications (i.e., Cospas-Sarsat documents C/S A.001, C/S A.002, C/S A.003, C/S A.005, C/S T.002, C/S T.009, and C/S T.019) were introduced, making certain that at the minimum:

- end-to-end Ground Segment testing could occur,
- associated data was not prematurely distributed as operational distress alerts,
- beacon manufacturers and owners had a clear understanding of their responsibilities; and

b) prepare associated modifications to System documents for review at relevant Cospas-Sarsat meetings in 2018.

REVIEW OF DECLARED COVERAGE AREA IN MEOLUT

4.2.27 The Council **NOTED** from document CSC-59/OPN/4/18 (France) proposed changes to document C/S T.020 to include the provision of technical parameters used for the definition of the MEOLUT DCA, and that:

a) during the review of the MEOLUT commissioning reports at JC-30 and JC-31, it was observed that the DCAs presented by the Administrations were not supported with sufficient information to demonstrate confidence that MEOLUT performance was met in the DCAs;

b) as the Council approved the MEOLUT commissioning, including its DCA, which was thus endorsed by the Programme, Participants should provide enough information to effectively review the DCA reported in the commissioning reports;

c) in the frame of the Expert Working Group on MEOSAR FOC Global Coverage, France, Russia and the USA had developed more realistic MEOLUT performance simulators, which needed to be tuned to the real MEOLUT characteristics, using a limited amount of input data;

d) Participants agreed to request that additional MEOLUT technical data be provided in the MEOLUT commissioning report (see JC-30 Report, section 4.2.29 and Action Item TWG-30/AI.4) to allow any interested Participant to have a more well-founded assessment of the proposed DCA, using its own MEOLUT performance simulator with realistic inputs;

e) at JC-30, it had been clarified that there were no acceptance criteria on the requested MEOLUT technical data, but that they should be provided before the approval of the commissioning reports by the Council; and

f) it was proposed that the list developed at the JC-30 meeting (see JC-30 Report, section 4.2.28 (d)) be inserted in section A.5 "Coverage Area" of document C/S T.020 to describe the technical data to be provided by the Ground Segment Provider in its MEOLUT commissioning report.

4.2.28 The Council **NOTED** from document CSC-59/OPN/4/18 the recommendations to:

a) review and amend as necessary, the changes proposed to document C/S T.020; and

b) approve the agreed modifications to document C/S T.020.

4.2.29 The Council **NOTED** from discussion of document CSC-59/OPN/4/18 the views that:

a) the proposed text could not be approved at this time and should be further reviewed by the Correspondence Working Group on MEOLUT Documents;

b) the Joint Committee action item primarily invited participants to include the list of parameters that was agreed in document C/S T.020;

c) examples of the required information should be provided;

d) the MEOLUT technical parameters initially proposed at the JC-30 Meeting:

- were only information and not pass/fail criteria for the MEOLUT commissioning, and were required for the MEOLUT coverage simulation,
- had not been addressed by the Correspondence Working Group on MEOLUT Documents;

e) the inclusion of the parameter list in document C/S T.020 should not be further delayed as this relevant information was urgently needed to assess the MEOSAR global coverage using actual MEOLUT technical characteristics;

f) that the Correspondence Working Group could review the list of parameters for a possible review by the EWG-1/2018 and subsequent approval by the Council;

g) the proposed changes, because of their technical nature, could not be reviewed at this Council session but should be reviewed at JC-32;

h) should these changes not be approved:

- the simulation for global MEOSAR coverage would assume default parameters, not representative of the actual MEOLUT performance,
- all MEOLUTs would have the same coverage,
- the DCA estimated by the simulation would not reflect the DCA proposed by the Administrations.

i) other technical parameters should be added to the list (e.g., with details for S- and L-band);

j) an incomplete list of parameters was better than no list at all, as the objective was to avoid unrealistic DCAs, or DCAs that could not be independently verified before the MEOLUT commissioning was approved by the Council; and

k) no consensus could be reached to include the list of MEOLUT technical parameters in section A.5 "Coverage Area" of document C/S T.020.

4.2.30 The Council **DECIDED** to invite interested participants such as those collaborating within the Correspondence Working Group on MEOLUT Documentation to review the list of parameters to be included in document C/S T.020 for a possible review by the EWG-1/2018 and subsequent approval by the Council.

4.3 Beacon Matters (C/S T.001-Compliant and Second-Generation Beacons)

RESULTS OF BEACON PRODUCTION SURVEY FOR 2016 AND POPULATION FORECAST

4.3.1 The Council **NOTED** from document CSC-59/OPN/4/3 (Secretariat) the results of the annual beacon manufacturers' survey for 2016 and that:

a) manufacturers advised that 201,479 406-MHz beacons were produced in 2016, representing an increase of 2.3% from the 2015 production;

b) assuming an average life cycle of ten years for a 406-MHz beacon, the number of beacons removed from service in 2016 was taken as being equal to the number of beacons produced in the year 2006, i.e., about 85,300 beacons;

c) based on the above results and assumptions, there were over 1,789,000 beacons in use at the end of 2016, representing an increase of 6.9% over 2015; and

d) 95,845 EPIRBs, 22,026 ELTs and 83,608 PLBs were produced, which accounted for approximately 47.6%, 10.9% and 41.5% respectively, of the total 406-MHz beacon production in 2016.

4.3.2 With regard to location-protocol beacons, i.e., beacons equipped with an internal GNSS receiver or supporting various interfaces with external navigation devices, the Council further **NOTED** from document CSC-59/OPN/4/3 that in 2016:

a) over 150,000 beacons (74% of all beacons produced in 2016) were location-protocol (LP) beacons, including approximately 11,000 ELTs (or about 7% of all LP beacons), about 56,000 EPIRBs (or about 38% of all LP beacons), and about 82,000 PLBs (or 55% of all LP beacons produced in 2016); and

b) the Secretariat estimates indicated that, in 2016, the population of LP beacons worldwide had reached about 1,123,000 units (63% of the global 406-MHz beacon population).

4.3.3 With regard to the beacon population forecast provided to year 2026, the Council further **NOTED** from document CSC-59/OPN/4/3 that according to the Secretariat's estimate, the global 406-MHz beacon population could reach about 1,887,000 in 2017, 2,128,000 in 2020 and 2,564,000 in 2026, or more, depending on future market developments.

4.3.4 The Council **DECIDED** to request the Secretariat to:

a) prepare and distribute a summary of the survey on 2016 production of 406-MHz beacons among beacon manufacturers that participated in the survey; and

b) conduct in 2018 a survey of beacon manufacturers on production of 406-MHz beacons in 2017 and report the results to the Council.

BEACON MESSAGE TRAFFIC AND CHANGES TO C/S T.012

4.3.5 The Council **NOTED** from document CSC-59/OPN/4/12 (Secretariat) the revised beacon traffic model parameters derived from the French and USA data provided in documents JC-31/Inf.50 and JC-31/5/12, and that:

a) the French and USA traffic data were consistent, and merging of the two sets of data yielded parameter values for the traffic model that were generally very stable;

b) the LEOSAR self-test traffic parameter had been updated with the last observed self-test traffic (OSTT) value reported in 2016 (2.69 active beacons, compared to 0.99 in 2015);

c) peak-time factors and GEOSAR self-test traffic assumptions could not be updated due to lack of new data, and that the values for the year 2009 were used in the traffic model;

d) average activation rates and durations had been generally stable;

e) considering all effects and parameters taken together:

- the LEO beacon message traffic had increased by more than four equivalent beacons in 2016 because of the significant OSTT parameter increase,
- the GEO beacon message traffic had increased by more than one equivalent beacon because of beacon population increase;

f) when applied to each individual frequency channel, the traffic model indicated that the peak traffic:

- was decreasing in channel B (406.025 MHz) and channel C (406.028 MHz),
- was rapidly growing in channel F (406.037 MHz),
- remained low in channel G (406.040 MHz);

g) when applied to each individual frequency channel (i.e., channels B, C, F and G), the traffic model indicated that peak traffic in all frequency channels remained within the estimated capacity limits for both LEOSAR and GEOSAR systems; and

h) changes were proposed to document C/S T.012 to reflect the changes in the beacon message traffic and beacon capacity models, resulting from the 2016 monitoring provided by France and the USA.

4.3.6 The Council also **NOTED** from document CSC-59/OPN/4/12 the recommendation that it:

a) review the updated traffic data provided and the summarised changes proposed to document C/S T.012;

b) approve, as appropriate, the changes to document C/S T.012 to reflect the changes in the beacon message traffic and beacon capacity models resulting from 2016 monitoring by France and the USA;

c) invite France, the USA and other Ground Segment Providers to continue performing their traffic analysis and provide the Secretariat with updated model data;

d) invite Ground Segment Providers to:

- monitor the variation in active beacons transmitting in self-test mode (OSTT) for the LEOSAR and GEOSAR systems,
- identify the origin of the OSTT increase observed in 2016 for the LEOSAR system;

e) evaluate the impact of the OSTT increase on the System capacity; and

f) invite the Secretariat to continue assessing the forecast traffic on the basis of updated model parameters and data.

4.3.7 The Council **DECIDED** to invite:

a) France, the USA and other Ground Segment Providers:

- to continue monitoring the traffic in each channel and report on it at future Joint Committee meetings,
- to monitor the variation in active beacons transmitting in self-test mode (OSTT parameter) for the LEOSAR and GEOSAR systems,
- identify the origin of the OSTT increase observed in 2016 for the LEOSAR system,
- evaluate the impact of the OSTT increase on the System capacity; and

b) the Secretariat to continue assessing the forecast traffic on the basis of updated model parameters and data.

4.3.8 The Council **NOTED** from discussion of document CSC-59/OPN/4/12 general agreement on the acceptability of the amendments proposed by the Secretariat to document C/S T.012 Issue 1 - Revision 13, "Cospas-Sarsat 406 MHz Frequency Management Plan".

4.3.9 The Council **DECIDED** to approve Issue 1 - Revision 13 of document C/S T.012 "Cospas-Sarsat 406 MHz Frequency Management Plan" with the amendments proposed in document CSC-59/OPN/4/12 and provided at Annex 11 to this Summary Record.

TG-1/2017 SUMMARY REPORT

4.3.10 The Council **NOTED** from document CSC-59/OPN/4/4 (TG-1/2017 Chair) the report of the TG-1/2017 Meeting provided separately and that the Task Group addressed matters related to SGBs and FGB/SGB ELT(DT)s, including:

a) review of recommendations and action items from JC-30;

b) SGB Proof-of-Concept (POC) test results and the preliminary D&E test plan;

c) updates to document C/S R.017 (SGB implementation plan);

d) updates to document C/S T.021;

e) updates to technical documents to support the development of SGBs and SGB-ELT(DT)s, including documents C/S T.018, C/S T.019, C/S T.020, C/S T.002, C/S T.005, C/S T.009, and C/S T.010;

f) updates to technical documents to support the development of FGB ELT(DT)s, including documents C/S T.001, C/S T.007, C/S T.019, C/S T.020, C/S T.002, C/S T.005, C/S T.009, and C/S T.010; and

g) revision of document C/S T.008

4.3.11 The Council also **NOTED** from document CSC-59/OPN/4/4 the list of TG-1/2017 action items raised during the meeting, with their status updated following the CSC-58 and JC-31 Meetings.

DEVELOPMENT OF C/S T.018 AND C/S T.021

4.3.12 The Council **NOTED** from document CSC-59/OPN/Inf.23 (USA):

a) information regarding the status and future plans of the participants of the T.018/T.021 Correspondence Working Group;

b) status of the group's work regarding applicable JC-31 action items and future plans to address outstanding items;

c) contributions to proposed additional amendments to document C/S T.018, as submitted separately, in documents CSC-59/OPN/4/5 and CSC-59/OPN/4/6-Rev.1;

d) the status of the ongoing drafting work for document C/S T.021 since JC-31, including a list of completed sections, and sections deemed by the CWG as high priority, requiring additional work prior to initial document approval;

e) that the T.018 to T.021 Compliance Matrix had been updated to align it with proposed amendments to document C/S T.018 and draft document C/S T.021; and

f) the goal that the CWG was working toward developing a completed document C/S T.021 at TG-1/2018 to a sufficient level of detail that it could be approved at a future Cospas-Sarsat meeting.

DESCRIPTION OF THE LINEAR FEEDBACK SHIFT REGISTER FOR SGBS

4.3.13 The Council **NOTED** from document CSC-59/OPN/4/5 (France/USA) a proposed revision to document C/S T.018 Issue 1 - Revision 2 recommended by JC-31 for Council approval and that:

a) the proposed amendments were made as a result of agreement made at JC-31 on the description of the generation of the PRN sequences but which were not fully incorporated into the annexes of the JC-31 Report since the master version of a figure showing the Linear Feedback Shift Register (LFSR) was not available at the time of JC-31;

b) subsequent to JC-31, the LFSR had been further discussed within the T.018/T.021 CWG and the CWG participants had determined that further clarification seemed to be necessary to avoid any confusion on the LFSR implementation; and

c) the proposed changes to document C/S T.018 were of a clarification nature only, and did not change the intent of the SGB specifications proposed by JC-31, but were

necessary for beacon manufacturers to adequately design their beacon to the intended C/S T.018 requirements.

4.3.14 The Council **NOTED** from document CSC-59/OPN/4/5 the recommendations that it:

a) consider the proposed clarifications to document C/S T.018; and

b) approve document C/S T.018, "Specification for Second-Generation Cospas-Sarsat 406-MHz Distress Beacons", Issue 1 - Revision 2, as appropriate.

4.3.15 The Council **NOTED** general agreement to accept the amendments proposed in document CSC-59/OPN/4/5, as provided in Annex 13 to this Summary Record, and that these amendments should be included in document C/S T.018 Issue 1 – Revision 2 as submitted for approval by JC-31.

4.3.16 The Council **NOTED** that decisions related to document C/S T.018 could be found in section 3.2.78 of this Summary Record.

RLS FUNCTIONALITY FOR SGBS

4.3.17 The Council **NOTED** from document CSC-59/OPN/4/6-Rev. 1 (USA):

a) that JC-31/AI.10 had invited participants to further study the need for a third bit and alternative solutions that would not require the use of a third bit to allow identification of the RLS beacon type when rotating field #0 was transmitted intermittently with rotating field #2, and present proposals to CSC-59 and future Cospas-Sarsat meetings;

b) that the possible alternatives to the assignment of a bit had been considered and that the simplest approach was to adopt the assignment of a bit to indicate an RLS beacon type;

c) a proposed amendment to document C/S T.018 to amend Table 3.1; and

d) a proposed amendment to document C/S A.001 to amend section 4.2.10.1.

4.3.18 The Council also **NOTED** from document CSC-59/OPN/4/6-Rev.1 the recommendations that it:

a) note the benefit of allocating a spare bit in the main field of SGB coding to indicate the presence (or lack thereof) of RLS functionality;

b) decide to amend the Red Book version of document C/S T.018 with the revision provided; and

c) decide to amend the Red Book version of document C/S A.001, "Cospas-Sarsat Data Distribution Plan", with the revision provided.

4.3.19 The Council **NOTED** general agreement to accept the additional amendments, as proposed in document CSC-59/OPN/4/6-Rev. 1, to documents:

a) C/S T.018, as provided in Annex 13 to this Summary Record; and

b) C/S A.001, as provided in Annex 4 to this Summary Record.

4.3.20 The Council **NOTED** that decisions related to these documents could be found in section:

a) 3.2.78, for document C/S T.018; and

b) 3.2.84, for document C/S A.001.

DISTRIBUTION OF TAC DATABASE

4.3.21 The Council **NOTED** from document CSC-59/OPN/4/10 (USA) that:

a) SGB coding was predicated on the assumption that some information about the beacon characteristics would be extracted from a TAC database located at each MCC for operational use;

b) JC-31 had recommended a TAC data distribution process which required the:

- Secretariat to maintain a TAC database and provide updates to the FMCC when new TACs were assigned,
- FMCC to distribute the TAC database information through the nodal MCC network via SIT 927 messages;

c) as SGBs became operational, there would be an increased reliance on the information contained in the TAC database, and that it was important that the TAC information was updated in a timely and accurate manner; and

d) due to the new criticality of this TAC data to the operational system, it might be beneficial to review the roles and responsibilities of the Secretariat and beacon manufacturers as well as the process of maintaining the database itself.

4.3.22 The Council also **NOTED** from document CSC-59/OPN/4/10 the recommendations that the Council:

a) note that the SGB coding scheme utilized the TAC number and serial number transmitted in the beacon message to access some beacon information from a TAC database located at each MCC;

a) invite interested Participants, as appropriate, to propose practices and procedures to reliably maintain and distribute the TAC database to MCCs; and

b) invite interested Participants to consider the need to review the roles and responsibilities of the Secretariat and beacon manufacturers, to ensure timely, efficient, and accurate updating of TAC information in local databases of MCCs.

4.3.23 The Council **NOTED** from document CSC-59/OPN/4/14 (Secretariat):

a) the description of the current practices being followed by the Secretariat for the maintenance of the TAC database and provision of a notification to MCCs as FGB TACs were approved;

b) a description of the new SIT 927 messages recommended by JC-31 for use in the distribution of SGB TAC database information; and

c) a description of the potential increase in TAC notification messages which could be attributed when SGBs were introduced into the operational system.

4.3.24 The Council also **NOTED** from document CSC-59/OPN/4/14 the recommendations that it:

a) consider the information provided, as appropriate, when the recommendations in document CSC-59/OPN/4/10 were reviewed;

b) consider providing appropriate guidance in response to the issues raised in sections 3.1 and 3.2 of document CSC-59/OPN/4/14; and

c) invite participants to, taking into consideration any guidance provided by the Council, develop amendments to Programme documentation to be considered at future Cospas-Sarsat meetings, as appropriate.

4.3.25 The Council **NOTED** from discussion of documents CSC-59/OPN/4/10 and CSC-59/OPN/4/14, that the:

a) Programme had not decided that all changes to an SGB would require a new TAC number to be assigned, as suggested;

b) introduction of a local MCC TAC database associated with the SIT 927 messages was a new concept introduced at JC-31 and would likely require new MCC software functionality to be developed; and

c) Council did not have any specific guidance with respect to the development of the TAC data distribution process at this time.

4.3.26 The Council **DECIDED** to invite:

a) interested Participants to propose practices and procedures to reliably maintain and distribute the TAC database to MCCs;

b) interested Participants to consider the potential need to review the roles and responsibilities of the Secretariat and beacon manufacturers, to ensure timely, efficient, and accurate updating of TAC information in local databases of MCCs; and

c) participants to develop possible amendments regarding the distribution of TAC database information to Programme documentation to be considered at future Cospas-Sarsat meetings.

POTENTIAL SGB ID LIMITATION

4.3.27 The Council **NOTED** from document CSC-59/OPN/Inf.14 (RTCM):

a) that a potential issue with an SGB's identity and the beacon's 23 Hex ID had been identified related to the inclusion of the unique TAC and serial number in the beacon coding;

b) information regarding the coding of beacon IDs for C/S T.001-compliant beacons and comparison to the planned C/S T.018-compliant beacons;

c) information regarding existing beacon registration databases;

d) a comparison of the advantages and disadvantages of various coding options to Administrations and users;

e) a specific concern regarding ELTs that use Programming Adapters in the aviation industry and their compatibility with SGB coding;

f) information regarding limitations that the current SGB coding requirements may cause a barrier to SGBs being adopted in the maritime and aviation market segments; and

g) potential mitigation measures that could be considered at future Programme meetings.

POLICY FOR MINOR BEACON CHANGES

4.3.28 The Council **NOTED** from document CSC-59/OPN/Inf.22 (RTCM/USA) information related to the progress of the development of the Minor Beacon Changes concept, and that:

a) at JC-31, the USA submitted document JC-31/6/5, which described a methodology framework for addressing and processing minor changes to beacons, identified the main components of the framework, and suggested establishing an informal correspondence working group of participants to further develop the concept of minor beacon changes;

b) JC-31 assigned action item JC-31/AI.13 inviting the USA, RTCM, the Secretariat and other stakeholders to continue intersessional development of the minor-change concept in a correspondence working group, and report the results of their work at future meetings;

c) as part of intersessional work, certain Programme policy points were identified as requiring Council consideration and guidance was sought prior to their incorporation in an appropriate Programme policy document;

d) to address the JC-31 action items, the USA and RTCM had prepared a tentative plan, which would be used in development of the minor changes concept and accomplishing the tasks that would be defined once the correspondence working group was established and began its work;

e) Participants should consider the proposed plan of action and provide input as appropriate to further the development of a standard process for addressing and managing beacon minor changes; and

f) it was imperative that the minor changes topic be addressed at EWG-1/2018, or in another appropriate forum, to enable timely completion of the SGB type-approval standard to meet Cospas-Sarsat goals and timelines.

SGB ELT(DT) SCHEDULE

4.3.29 The Council **NOTED** from document CSC-59/OPN/4/17 (USA) further details concerning the timeline for SGB ELT(DT) derived from the following assumptions:

a) the USA's SGB POC Test Plan was designed to achieve the same goals as the technical tests of the MEOSAR D&E Test Plan;

b) the goal for SGB D&E would be to test the operational aspects of SGB performance that included the distribution of SGB alerts from the MEOLUT to the MCC and RCCs;

c) the test plan for the SGB D&E would be drafted for the TG-1/2018 Meeting and finalized shortly thereafter;

d) the Maryland MEOLUT-to-USMCC interface would be completed in Summer 2018, and the full USMCC readiness would be completed by mid-July 2018, with tests occurring in late July 2018 involving international participation if other MCCs were available, and a final report with all analysis submitted to JC-32;

e) to obtain a TAC for a commercial SGB by the end of 2018, type approval lab capability development would continue through the summer of 2018 and the verification that the commercial SGB complied with C/S T.018 specifications would be performed by NASA prior to type approval testing by the type approval lab;

f) NASA would validate the laboratory test report for the commercial beacon and provide a report to JC-32; and

g) the type approval report would be submitted to Cospas-Sarsat in late fall 2018, with an anticipated TAC issued by the end of 2018.

4.3.30 The Council also **NOTED** from document CSC-59/OPN/4/17 (USA) that another important ICAO deadline for ELT (DT)s implementation was for the Ground Segment to achieve global coverage to support operations by 2021 and that:

a) both FGB and SGB ELT(DT) solutions relied on global coverage provided through encoded location alerts to meet this deadline;

b) the USA was committed to achieving the ICAO requirement for the distribution of ELT(DT) alerts by 1 January 2021, with the following assumptions:

- global coverage could be achieved with as few as 4 MEOLUTs, and should be readily achievable if each nodal MCC was ELT(DT) capable and had an associated ELT(DT) capable MEOLUT,
- it would not be necessary that all MCCs be updated to SGB ELT(DT) capability to relay the correct information to appropriate RCCs for SGB ELT(DT)s; and

c) the Ground Segment changes agreed at JC-31 with the implementation deadlines documented by the Secretariat according to our configuration management procedures would allow the global coverage required by ICAO to be achieved.

4.3.31 The Council further **NOTED** from document CSC-59/OPN/4/17 the recommendations that it:

a) note the plans and schedule for SGB ELT(DT) development to meet the ICAO Annex 6, Part 1 deadline; and

b) consider the schedule's reliance on the timely approval of document C/S T.021 when considering Cospas-Sarsat meeting schedules.

4.3.32 The Council **NOTED** from discussion of document CSC-59/OPN/4/17 the views that:

a) approving document C/S T.021 at the earliest opportunity was important but the timeline proposed by the USA was very optimistic, in particular with regard to the D&E Test Phase development, as the D&E phase might have impacts on the commissioning of the LUTs;

b) the SGB development timeline should not be too pessimistic (e.g., assume that everything would go wrong), furthermore, Participants should also be prepared to relax a few parameters as long as the minimum necessary requirements were achieved;

c) there was a need to work on the tools required to validate the first SGB and a laboratory that would be used to verify the beacon's performance, and that France was prepared to participate in this validation for both the laboratory and the beacon;

d) the part of the schedule representing the SGB POC should be itemized with more details; and

e) the schedule presented by the USA did not show that the timeline required to make SGB ELT(DT)s available on the market was dependent upon the timely approval of document C/S T.021, and that the required issue date for document C/S T.021 was still to be determined.

4.3.33 The Council also **NOTED** from discussion of document CSC-59/OPN/4/17 that:

a) to support the participation of other Ground Segment Providers, the USA should inform Participants in advance when SGB testing would be undertaken to allow other LUTs to collect data;

b) the USA was planning on testing SGBs on 7February 2018 with SGB transmissions provided from Texas, USA; and

c) the USA would inform other Participants when future SGB tests would be performed.

4.3.34 The Council further **NOTED** from discussion of document CSC-59/OPN/4/17 agreement that:

a) the SGB development schedule would need to be further discussed at future Cospas-Sarsat meetings; and

b) the development of document C/S T.021 needed to be continued in order to be completed as soon as possible.

4.4 International Beacon Registration Database

CURRENT IBRD STATUS

4.4.1 The Council **NOTED** from document CSC-59/OPN/Inf.3 (Secretariat) the status of the existing International Beacon Registration Database (IBRD) and the invitation to provide comments and guidance on the use of the IBRD to the Secretariat, as required.

4.4.2 The Council further **NOTED** from document CSC-59/OPN/Inf.3 that:

a) the IBRD was open for beacon registration for 167 Administrations with about 74,000 beacons hosted (+9.9%), and the work on liaising with Administrations to clean or close as necessary some identified Administrations' accounts, was in progress;

b) since January 2017, 13 Administrations had contacted the Secretariat to update their intention to use the IBRD, and the number of search and rescue community logins was increasing;

c) on 18 August 2017, a clerical error by a vendor employee that hosted the IBRD server caused an IBRD interruption of six hours, which was within the tolerance on 99.5% availability but outside the 2-hour maximum specified in C/S D.001, and that the Secretariat was making arrangements to introduce another layer of redundancy in the IBRD hosting, entrusting another vendor with the management of a redundant server; and

d) in 2017, the Secretariat had received about 500 requests to assist IBRD customers (non-Participant Administrations representing almost 59% of the enquiries), and appropriate video minis could be linked to the new IBRD frequently-asked-questions webpage to solve most of the encountered users' concerns.

IBRD REBUILD STATUS

4.4.3 The Council **NOTED** from document CSC-59/OPN/4/2 (Secretariat) that:

a) at the CSC-58 Closed Meeting, the Council had received in document CSC-58/CLD/5/8 the update on progress and decided to invite the Secretariat to continue with the IBRD rebuild, considering guidance provided by the Council, and present to JC-31 and CSC-59 a further update on the IBRD rebuild;

b) at JC-31, the Joint Committee noted general agreement to invite (OWG-31/AI.15):

- the Secretariat to ensure that the improvements and additional IBRD features already submitted 'off line' to the Secretariat were considered,

- participants to provide any advice and recommendations to the Secretariat for the IBRD rebuild before 31 December 2017,
- the Secretariat to seek further views about the likely interest of Administrations in acquiring the new IBRD software for use in their national beacon registry systems,
- the Secretariat to proceed with the vendor-selection process with the benefit of this additional input; and

c) as of 31 December 2017, no Participants had provided any further advice and recommendations to the Secretariat, and the Secretariat had received no inquiries from Administrations reflecting interest in acquiring the new IBRD software for use in their national beacon registry systems.

4.4.4 The Council further **NOTED** from document CSC-59/OPN/4/2 (Secretariat) that the Secretariat:

a) would engage with the bidders to establish, as well as possible, consistent measures for comparison among the bids;

b) would discuss with the bidders whether their options or prices should be adjusted based on comparable expectations from all vendors;

c) would then apply an objective list of criteria to evaluate the bids on a comparable basis for making a vendor selection;

d) had updated the IBRD rebuild work plan and associated calendar to take advantage of the time for this work, with the objective of having the new IBRD ready around the end of 2018;

e) provided, for information, a recent status of use of the IBRD by Administrations illustrating the 41 known Administrations that would need to modify their own registration databases to accommodate SGBs and other new-technology beacons; and

f) would continue to solicit information to have the best understanding of the state of readiness of those Administrations.

4.4.5 The Council **NOTED** from document CSC-59/OPN/4/2 (Secretariat) the recommendation that it:

a) request the Secretariat to continue its work on the IBRD rebuild project;

b) provide any advice on the attached selection criteria, as it should be applied to proposals;

c) decide that that the Secretariat should continue with its work on the IBRD rebuild; and

d) remind Participants and Administrations of the need to update their registration databases in a timely fashion to be able to properly record data for SGBs and ELT(DT)s.

4.4.6 The Council **NOTED** from discussion of document CSC-59/OPN/4/2 (Secretariat):

a) a preference from a Participant to use web-services based data exchange as opposed to the current XML-based method to upload and download national beacons to and from the IBRD;

b) in response, information from the Secretariat that one of the vendor proposals within the budgeted range agreed by the Council (see document CSC-59/OPN/7/4) included web services as well as additional features facilitating use of the IBRD over intermittent or unreliable internet connections;

c) information from the Secretariat that the criteria for a smooth interface for national data providers had been included in the original request for proposals (RFP); and

d) a remark regarding the wide range of prices associated with bids received and, in response, information from the Secretariat that based on its overall assessment of the bids it had a high degree of confidence that the most-recently provided budget estimate was accurate.

4.4.7 The Council **DECIDED** to:

a) invite the Secretariat to select the vendor and proceed to engage that vendor to begin development of the IBRD rebuild; and

b) remind Participants and Administrations about the need to update their registration databases in a timely fashion to be able to properly record data for SGBs and ELT(DT)s.

4.5 Quality Management System

4.5.1 The Council **NOTED** from document CSC-59/OPN/4/13-Corr.1 (Secretariat) a preliminary assessment of the cost, feasibility and implementation timeline for the Quality Management System (QMS) automated reporting system (QARS), and that:

a) JC-31 invited (JC-31/AI.15) the Secretariat to assess cost and feasibility of implementing the needed QARS and its interface to automate the reporting of QMS status elaborated by nodal MCCs to the Cospas-Sarsat website, and report on the matter at CSC-59;

b) the QARS was not intended to be an operational performance-assessment mechanism;

c) the QARS concept was developed to:

- respond to concerns raised by TG-2/2016 participants regarding the manual, "mechanical" workload on Ground Segment Providers to report QMS status on the Cospas-Sarsat website,
- display MEOSAR QMS status on the Cospas-Sarsat website as soon as it was assessed by the nodal MCCs;

d) the cost, feasibility and timeline were assessed based on the proposal made in document JC-31/8/3, but that the capability for the QARS to process raw QMS data for the notification to MCCs of MEOSAR QMS changes on the Cospas-Sarsat website was removed from this proposed QARS architecture;

e) the cost estimate was based on the assumption that the QARS server would be hosted in cloud infrastructure, with full redundancy, 24/7 emergency support and an external monitoring function;

f) the cost of the QARS was roughly estimated to be CAD 57,000 for implementation and CAD 50,000 for yearly maintenance, but would depend on the interface message formats between the nodal MCCs and the QARS, which had not yet been defined;

g) regarding the implementation timeline, it was proposed to begin the QARS implementation after Council approval, beginning in 2019, once the final MEOSAR QMS status-data format was approved, for a total implementation period of four to six months once its development was approved by the Council; and

h) it was proposed to allocate a budget of CAD 5,000 in the 2018 Secretariat budget for setting up FTP-over-VPN test connections to one or two volunteer nodal MCCs.

4.5.2 The Council **NOTED** from document CSC-59/OPN/4/13-Corr.1 the recommendations that it:

a) invite the Participants, with the support of the Secretariat, to define the format of the QMS status messages to be sent by the nodal MCCs to the QARS, and propose amendments to appropriate System documents at JC-32 to reflect these formats;

b) invite the Secretariat to provide a consolidated cost estimate of implementing the QARS and its interfaces to automate the reporting to the Cospas-Sarsat website of MEOSAR QMS status determined by nodal MCCs, taking into account the format of the QMS-status messages to be developed for consideration by JC-32, and report on the matter at the early-2019 Council;

c) invite the Secretariat to test FTP-over-VPN connections with one or two volunteer nodal MCCs, with the objective of reducing risks related to the QARS implementation, for a planned cost of CAD 5,000 (included in the 2018 forecast expenditure plan); and

d) further direct the Secretariat on the QARS implementation, as appropriate.

4.5.3 The Council **NOTED** from discussion of document CSC-59/OPN/4/13-Corr.1:

a) views to support the implementation of the QARS which would allow eliminating manual work by the operator and associated possible errors;

b) the need to set up FTP/VPN connections might require the support of external expertise;

c) the intent was to provide refined cost estimates at the early 2019 Council Session to allow the Council to decide on implementation options for the QARS, considering the costs for various options;

d) that the implementation cost of the QARS should be carefully assessed and QARS functions be strictly limited to intended primary needs without unnecessary features; and

e) that Australia and Spain volunteered to participate in the FTP-over-VPN testing planned at the end of 2018.

4.5.4 The Council **NOTED** general agreement of the proposed recommendations of document CSC-59/OPN/4/13-Corr.1 and **DECIDED** to invite the:

a) Participants, with the support of the Secretariat, to define the format of the QMS status messages to be sent by the nodal MCCs to the QARS, and propose amendments to appropriate System documents at JC-32 to reflect these formats;

b) Secretariat to provide refined cost estimates for implementing the QARS and its interfaces, with cost estimates for various options, to automate the reporting to the Cospas-Sarsat website of MEOSAR QMS status determined by nodal MCCs, taking into account the format of the QMS-status messages to be developed for consideration by JC-32, and report on the matter to the Council; and

c) Secretariat to test FTP-over-VPN connections with one or two volunteer nodal MCCs, with the objective of reducing risks related to the QARS implementation, for a planned cost of CAD 5,000 (included in the 2018 forecast expenditure plan).

4.5.5 The Council **NOTED** from document CSC-59/OPN/Inf.15-Corr.1 (UAE) the status and information regarding the reference beacon located at Abu Dhabi, UAE, and that:

a) the reference beacon was fully operational in accordance with documents C/S T.022 and C/S T.001; and

b) the Secretariat should update the list of reference beacons provided on the Cospas-Sarsat website and all relevant documents to include information regarding the Abu Dhabi reference beacon.

4.6 Cospas-Sarsat Website

WEBSITE MAINTENANCE AND HOSTING STATUS

4.6.1 The Council **NOTED** from document CSC-59/OPN/Inf.24 (Secretariat) the status of the Cospas-Sarsat website (http://cospas-sarsat.int), and recent changes to the support contractor and hosting platform for the site.

4.6.2 The Council further **NOTED** from document CSC-59/OPN/Inf.24 that:

a) termination of the maintenance relationship with the prior vendor required exceptional efforts to locate a replacement firm, familiarize it with the needs of the Programme, allow it to reverse-engineer the website infrastructure, and to be confident in its ability to meet the needs of the Programme for future changes and customizations within the existing site;

b) the new website maintenance vendor had reviewed and identified problematic areas of the website;

c) a major content management system (CMS) platform upgrade had been required;

d) issues relating to stability and efficiency were identified and remedied; and

e) the website was migrated to a lower-cost, more fully-featured and reliable cloud hosting provider.

WEBSITE BEACON-MESSAGE DECODER/ENCODER

4.6.3 The Council **NOTED** from document CSC-59/OPN/Inf.19 (Secretariat):

a) the progress made by the Secretariat in developing the website beacon decode/encode functionality which supports the ability to generate and verify a hexadecimal identifier code for any type of beacon, including future RLS-capable beacons, ELT(DT)s and SGBs, using any approved coding protocol; and

b) the invitation for Participants to provide any advice and recommendations to the Secretariat for further development and improvements to the tool available in its beta version at https://cryptic-earth-89063.herokuapp.com/decode.

5: MEOSAR SYSTEM EVOLUTION

5.1 MEOSAR System Operations (EOC, IOC)

PREPARATION FOR RETURN LINK SERVICE INTO OPERATIONS

5.1.1 The Council **NOTED** from document CSC-59/OPN/5/2 (EC) the status of the implementation of the RLS, which included issues regarding its implementation, and that:

a) the objective of the European Commission was to start the RLS operations at the end of 2018 / early 2019 as part of the Galileo Programme Enhanced Service Milestone;

b) at JC-31, a number of issues were raised related to the smooth implementation of the RLS, in particular, the:

- deployment of the Cospas-Sarsat Ground Segment to nominally handle the RLS protocol,
- identification of RLS-capable beacons registered in national databases;

c) the EC had made an analysis of the expected RLS ground segment coverage by Cospas-Sarsat MCCs based on the information provided at JC-31, which indicated that the Ground Segment coverage for the RLS protocol might not be global at the end of 2018 when the EC intended to declare the start of the RLS;

d) if TACs were issued for RLS beacons at the beginning of 2019, this might mean that the Return Link Messages would not be delivered to those beacons located in the MCC areas where the RLS protocol was not supported and/or that the distribution of alerts of RLS beacons located in the MCC areas where the RLS protocol was not supported might be delayed;

e) the current RLS protocol implied that a TAC and serial number had to be used for the identification of the beacon in the national database, however, in a number of countries, EPIRBs and ELTs were identified with an MMSI number which could not be coded in the current RLS protocol for FGBs and, therefore there would be no possibility to deploy RLS EPIRBs and ELTs in these countries at the start of the RLS;

f) at this time, it was not possible, either for the Cospas-Sarsat Ground Segment, or for the Galileo Programme to envisage a further modification of the RLS protocol in document C/S T.001 for the first generation of Cospas-Sarsat beacons, as the entry into operations of the RLS was planned at the end of 2018 / early 2019; and

g) for those Administrations that did not allow the use of TAC and serial number for EPIRB and ELT identification, there were possible solutions which included:

- making use of the Cospas-Sarsat International Beacon Registration Database for all RLS beacon registrations,
- establishing a database to make the association between serial numbers and non-serial beacon identification numbers (e.g., vessel IDs).

5.1.2 The Council also **NOTED** from document CSC-59/OPN/5/2 the recommendations that it:

a) note the status of the implementation of the RLS and consider that the objective of the European Commission was to start the RLS operations at the end of 2018 / early 2019;

b) note that a period would be defined prior to the start of the RLS operations to allow beacon manufacturers to test their RLS-capable beacons;

c) note the issue regarding the implementation of the RLS Protocol processing by the Cospas-Sarsat Ground Segment;

d) invite Ground Segment Providers to implement the required changes to support the RLS protocol with an implementation date of:

- June 2018 for nodal MCCs,
- December 2018 for all MCCs;

e) note the issue regarding the RLS beacon identification for EPIRBs and ELTs in the database of some Administrations; and

f) invite the concerned Administrations to define the mechanism which they intended to implement to support the registration of RLS-capable beacons.

5.1.3 The Council **NOTED** from discussion of document CSC-59/OPN/5/2 that the:

a) issue of RLS beacon identification for EPIRBs and ELTs not using a serial number identification would be further exacerbated if the UK proposal recently submitted at IMO to make RLS capability mandatory in EPIRBs was adopted;

b) EC, while supportive on the proposal of the UK, would be quite concerned if Cospas-Sarsat was to change the protocol for RLS as this would further delay the implementation of the required changes to the Ground Segment to process the new

protocol and put the operation of the RLS at risk, and would instead prefer that Administrations implement mechanisms to allow registration of EPIRBs using MMSI numbers in a way that they could be associated with serial ID; and

c) proposals put forward by the USA and the Secretariat in document CSC-59/OPN/4/15 would mitigate the potential initial lack of global Ground Segment coverage.

5.1.4 The Council **NOTED** from discussion of document CSC-59/OPN/5/2 general agreement that:

a) Ground Segment Providers should implement the required changes to support the RLS protocol with implementation dates as recommended by JC-31; and

b) all Administrations should investigate and implement mechanisms to ensure that all RLS beacon types could be properly registered in their beacon database.

5.1.5 The Council **DECIDED** to:

a) invite Ground Segment Providers to implement the required changes to support the RLS protocol with an implementation date of December 2018 for all MCCs; and

b) invite the concerned Administrations to define and implement mechanisms which they intended to use to support the registration of RLS-capable beacons.

IMPLEMENTATION OF MEOSAR IOC

5.1.6 The Council **NOTED** from document CSC-59/OPN/5/4 (USA) views on the status of criteria to be met to allow for the declaration of Initial Operational Capability (IOC), and that:

a) the MEOSAR system was declared at EOC by CSC-57, and had been operating efficiently since then;

b) it would be appropriate to consider the applicable criteria for a declaration of MEOSAR IOC targeted for January 2019;

c) it was critical that the declaration of the MEOSAR system at IOC be accomplished during 2019; and

d) the review of the MEOSAR IOC criteria had indicated that:

- regarding the completion of the D&E testing report:
  - the Phase II report would likely be approved at CSC-59,
  - the Phase III report could be completed by the Council Meeting in early 2019,
- regarding operational and technical documents requiring modifications as a result of D&E testing or EOC experience, revisions had been agreed at JC-31 and recommended for approval at CSC-59,

- regarding operational document C/S A.003, the USA had proposed that these changes agreed at JC-31 be deemed critical with implementation due by February 2019,
- regarding the commissioning of nodal MCCs and associated MEOLUTs, the USA expected to complete commissioning of the LGM AUMCC and LGM JAMCC in the first quarter of 2018:
  - it would not be necessary that all MCCs and MEOLUTs be upgraded for declaration of IOC entrance (only nodal MCCs and associated MEOLUT need be re-commissioning at the IOC performance level),
  - it would be possible for some MCCs and MEOLUTs to remain at the EOC level until implementation and testing of changes,
- regarding the number of MEOSAR satellites required to enter IOC, the 16 L-band satellites and another 8 scheduled for launch in 2018 should allow these criteria to be met,
- regarding the notification of ICAO, IMO and Administrations of the beginning of IOC, a letter could be written to the Programme's stakeholders and be ready for distribution at the time of expected IOC declaration in 2019.

5.1.7 The Council also **NOTED** from document CSC-59/OPN/5/4 that:

a) a solution for slow-moving beacons had yet to be achieved;

b) the target date for the declaration of MEOSAR IOC should be moved from January to October of 2019;

c) the next MEOSAR implementation milestones included, at:

- CSC-59, approval of operational documents that included QMS, as critical changes to the Ground Segment,
- JC-32, review of testing and analysis on slow-moving beacons and updates as necessary to System documentation,
- CSC-60 in February 2019, agreement on changes to Ground Segment for slow-moving beacons,
- JC-33 in June 2019, review of commissioning reports for components still entering MEOSAR IOC,
- CSC-61 in October 2019, review of IOC milestones to declare MEOSAR IOC,
- JC-34 in June 2020, review of MEOSAR IOC commissioning reports from non-nodal MCCs and their associated MEOLUTs,
- CSC-63 in October 2020, evaluation of the IOC progress towards FOC; and

d) Cospas-Sarsat should return to the "traditional" annual meeting schedule in 2019, and hence JC-33 would be held in June of 2019.

5.1.8 The Council also **NOTED** from document CSC-59/OPN/5/4 the recommendations that it:

a) note the USA position that it was important to maintain the goal of declaring MEOSAR IOC in 2019 because of the aging LEOSAR space segment and the Programme's commitments to its stakeholders;

b) note the USA views on the status of criteria to be met to allow for the declaration of IOC;

c) review the MEOSAR IOC implementation schedule to allow for a declaration of MEOSAR IOC by October 2019;

d) agree to deem operational document changes for MEOSAR QMS critical, with implementation due by February 2019; and

e) agree that a February 2019 Open and Closed Council meeting be followed by a June 2019 Joint Committee meeting, leading to a return to the traditional Programme meeting schedule.

5.1.9 The Council also **NOTED** from discussion of document CSC-59/OPN/5/4:

a) that Russia:

- could not confirm at this time its full confidence in the readiness for an LGM MCC and an associated MEOLUT for the IOC declaration date proposed in document CSC-59/OPN/5/4,
- would provide further information on the readiness of its LGM MCC and MEOLUT at JC-32;

b) general agreement that changes to operational documents for MEOSAR QMS should be considered as critical, with implementation due by February 2019; and

c) that the planning for 2019 meetings was further discussed in section 10.4 of this Summary Record.

5.1.10 The Council **NOTED** from discussion of the MEOSAR IOC timeline:

a) that Annex I of document C/S R.012, "Cospas-Sarsat 406 MHz MEOSAR Implementation Plan", should be amended to reflect the new anticipated date of October 2019 for the MEOSAR IOC declaration;

b) a view that the anticipated IOC date should be considered an objective based on a best-effort basis from the participants, and not as a mandatory date;

c) a view that meeting this anticipated IOC declaration date would be required for the Programme to meet its objectives and that the IOC should not be declared later than the end of 2019; and

d) general agreement:

- to change the IOC data of the figure in Annex I, "Tentative Time Line of MEOSAR Implementation" of document C/S R.012, to reflect an anticipated IOC declaration date by October 2019, as provided at Annex 8 to this Summary Record,
- that the declaration of the MEOSAR IOC was nonetheless contingent upon meeting the IOC entrance criteria.

RETURN LINK SERVICE (RLS) KEY PERFORMANCE INDICATORS (KPI)

5.1.11 The Council **NOTED** from document CSC-59/OPN/5/3 (EC) and its presentation, information regarding the proposed RLS, the status of the implementation of the RLS Key Performance Indicator (KPI) activities, and that:

a) since December 2016, the three European MEOLUTs at Spitzbergen, Maspalomas and Larnaca were continuously monitored by the KPI Collection Platform (KCP) operated in Toulouse by CNES and was based on the detection and localization of bursts transmitted by five European Reference Beacons (REFBEs) within the SAR Galileo Coverage (SGC);

b) the EC intended to start the initial operations of the RLS at the end of 2018 / early 2019 with the performance of this service monitored by the SAR Galileo Data Service Provider, using the REFBEs and KCP upgraded for RLS;

c) RLS declaration would be preceded by a service validation test campaign involving modified REFBEs and KCP, and taking place over Q3 and Q4 2018;

d) the current five REFBEs would be modified to transmit bursts using the RLS-test location protocol at a given rate, in addition to the currently transmitted bursts;

e) MCCs might need to be adapted in order to avoid any adverse impact on Cospas-Sarsat operations from signals transmitted by the REFBEs, and to support RLS KPI collection for the MCCs linked to the SAR/Galileo Ground Segment;

f) the CYMCC, FMCC, NMCC and SPMCC would be involved in the processing and distribution of the RLS messages generated by the REFBEs for RLS KPIs and these MCCs should be adapted for sending an RLS message to the FMCC when the REFBE location was confirmed in their service area using its RLS test transmissions;

g) as proposed by JC-31, MCCs should not filter alert data for RLS test protocol beacons, but that this requirement was meant for short duration RLS end-to-end tests;

h) the EC suggested, on the contrary, that MCCs not send any alert message to the MCC responsible for the REFBE location and not open an alert site for the REFBE RLS test transmissions; and

i) the details of the KPI collection had yet not been finalized but the EC intended to present a paper at the next Cospas-Sarsat meeting to provide more detail on how the collection would be made.

5.1.12 The Council also **NOTED** from document CSC-59/OPN/5/3 the recommendations that it:

a) consider the proposed RLS KPI collection activity;

b) note the intended changes to the REFBEs; and

c) invite participants to assess the implementation of amendments regarding the filtering of REFBE RLS test transmissions in their MCC and report their conclusions at JC-32.

5.1.13 The Council **NOTED** from discussion of document CSC-59/OPN/5/3 general agreement that Ground Segment Providers:

a) should further assess the MCC modifications required to avoid any impact from signals transmitted by the REFBEs on Cospas-Sarsat operations and to support RLS KPI collection for the MCCs linked to the SAR/Galileo Ground Segment once more information was provided by the EC on how the data collection would be made; and

b) implement applicable MCC modifications (as required) prior to the service validation test campaign involving modified REFBEs and KCP and planned over Q3 and Q4 of 2018.

5.1.14 The Council **DECIDED** to invite Participants to assess the implementation of amendments regarding the filtering of REFBE RLS test transmissions in their MCC and report their conclusions at JC-32.

MEOSAR DOWNLINK FREQUENCIES

5.1.15 The Council **NOTED** from document CSC-59/OPN/5/5 (EC/China):

a) the status of the discussions between the Galileo and BDS Programmes regarding the overlapping MEOSAR downlink frequencies;

b) the conclusions of the initial analysis made by the Galileo Programme which showed that if all the SAR/Galileo and SAR/BeiDou payloads were fully deployed and continued sharing the same centre frequency, the discrimination based only on an opposite polarization planned to be used by China for its SAR/BeiDou payloads would likely be insufficient to avoid interference (spoofing and/or jamming) between the two systems;

c) a preliminary assessment of possible remedies to this issue had identified two possible solutions to handle the overlapping downlink frequencies between MEOSAR space segment providers which consisted of:

- managing MEOLUT tracking in order to avoid tracking satellites in conjunction,
- adjustment of the MEOSAR frequency plan which would provide frequency separation in addition to polarization discrimination;

d) that further analysis would be performed as part of the Galileo-BDS coordination once additional technical elements would be received from China; and

e) the urgency of the current matters considering the coming launch of the first SAR/BDS payloads.

5.1.16 The Council also **NOTED** from document CSC-59/OPN/5/5 that, if a reallocation of the downlink frequency was to be considered for MEOSAR payloads such that there would be frequency separation in addition to discrimination by polarization, this solution:

a) would present a robust, future-proof solution with significant advantages;

b) as far as the SAR/Galileo and SAR/BDS systems were concerned, could be implemented while staying mostly in the lower part of the SAR band currently assigned to MEOSAR, and avoiding interference with LEOSAR payloads, since:

- a number of LEOSAR satellites embarking the SARR-1 payload were near their end of life,
- the repeater part of SARR-1 was not used in practice, and all future LEOSAR satellites embarked either SARR-2 or COSPAS payloads, which transmitted on a narrower spectrum bandwidth that would not overlap with the proposed adjusted SAR/BDS frequency,
- the Inmarsat-E SAR service, which occupied the slot of 1,544.2 to 1,544.24 MHz, was to be abandoned,
- shifting the BDS downlink frequency by only 110 kHz would solve all present and future interference issues without an impact on the LEOSAR satellites;

c) would allow for a further extension of the MEOSAR band also to be explored; and

d) would be programmatically feasible and in the interest of the MEOSAR programme in general, but that, considering China's proposed launch schedule, it would need to be implemented within a very short time, thereby the Council would need to send a clear signal now on the need to address the matter before the coming launch of the SAR/BDS.

5.1.17 The Council **NOTED** from document CSC-59/OPN/5/5 the recommendations that it:

a) note the status of the discussions between Galileo and BDS regarding the compatibility of the SAR/Galileo and SAR/BeiDou payloads downlink signal using the same centre frequency;

b) note the conclusions of the initial analysis made by the Galileo Programme and the current EC concerns on the impact on the MEOSAR performances if the SAR/Galileo and SAR/BeiDou payloads continued sharing the same centre frequency;

c) note the different conclusions of the initial analysis made by the BeiDou SAR programme regarding the impacts on the MEOSAR performances based on a limited number of SAR payloads;

d) note that further analysis was still to be performed on the compatibility between Galileo and BDS and that the established Galileo-BDS coordination on frequency compatibility would continue considering the ITU filing made by the Galileo Programme on the 1,544.1 MHz SAR downlink frequency;

e) invite swift and active involvement of all Cospas-Sarsat LEOSAR and MEOSAR space segment providers in the matters addressed by this paper and that these space segment providers and China nominate urgently their respective experts to establish an EWG or ad hoc expert group;

f) invite the proposed EWG or ad hoc experts group of the space segment providers and China to assess the compatibility between the various Cospas-Sarsat space segments (and in particular the SAR/BDS and SAR/Galileo compatibility) and the

possibility for the alternative frequency plan to ensure that multiple MEOSAR space segments could use different downlink frequency bands; and

g) invite the EWG or ad hoc experts group to report its initial conclusions on the above matters to the Council prior to the first launch of SAR/BDS payloads.

5.1.18 The Council **NOTED** from discussion of document CSC-59/OPN/5/5 that:

a) an initial analysis made by China regarding the potential interference between the SAR/Galileo and SAR/BeiDou payloads had indicated that using the same frequency band but with a different polarization would be sufficient to avoid interference between the two SAR systems, but further evaluation was still on-going to evaluate the matter;

b) China was also of the view that the efficient management of the MEOSAR downlink frequency band was an urgent matter and would be willing to participate in a working group meeting on this subject in March or April 2018 if such a meeting were to be organized;

c) the matter of interference between the various SAR payloads sharing the same frequency was not new and had been investigated at length in the past but it was worth investigating again, given the expansion in the MEOSAR-payload constellations;

d) China was planning to launch six BeiDou satellites equipped with a SAR payload by 2020 and future SAR deployment was still being investigated;

e) China was planning to launch its first two SAR payloads by August 2018 and wanted to have discussion on the matter prior to the launch of the first two payloads to make adjustments if needed;

f) the EC was very concerned about potential interference issues, as significant investment had been made in the deployment of the numerous SAR/Galileo payloads that had fixed downlink frequencies;

g) the EC and China would have to go through a coordination process at ITU regarding the use of the SAR downlink frequency;

h) establishing an experts working group would take more effort and time as it would take an extraordinary Council session to approve the terms of reference while establishing an ad hoc expert group would be easier to organize and would therefore fall outside the purview of the Council; and

i) the EC could provide preliminary Terms of Reference for the experts working group, which could be further developed with the other Space Segment Providers.

5.1.19 The Council **NOTED** from discussion of document CSC-59/OPN/5/5 general agreement for the Space Segment Providers, in coordination with the Secretariat, to:

a) establish an ad hoc group of experts on the efficient management of the MEOSAR downlink frequency;

b) establish Terms of Reference for the group; and

c) organize discussions on the efficient management of the MEOSAR downlink frequency, at the earliest convenient time.

5.2 MEOSAR Demonstration and Evaluation (D&E)

5.2.1 The Council **NOTED** from document CSC-59/OPN/5/1 (Canada/Spain) the Cospas-Sarsat 406 MHz MEOSAR System Demonstration and Evaluation Phase II Report and that:

a) a preliminary draft version of the MEOSAR D&E Phase II Report was made available for information in document CSC-55/OPN/Inf.8 (Canada/Spain);

b) the 2016 Task Group Meeting on MEOSAR Evolution further reviewed the MEOSAR D&E Phase II Report;

c) progress on the MEOSAR D&E Phase II Report since TG-2/2016 was slow, with the focus moved to other priorities such as MEOSAR D&E Phase III; and

d) a few more inputs had been received at JC-31, however no time was available to further the work on the Report at the meeting, but technical test participants took action to clean up and finalize it intersessionally.

5.2.2 The Council also **NOTED** from document CSC-59/OPN/5/1 the recommendations that it:

a) review the proposed MEOSAR D&E Phase II Report edited by Canada and Spain based on inputs from MEOSAR D&E test participants; and

b) approve the MEOSAR D&E Phase II Report, if there were no concerns, as document C/S R.023, "Cospas-Sarsat MEOSAR System Demonstration and Evaluation Phase II Report".

5.2.3 The Council **NOTED** from discussion of document CSC-59/OPN/5/1 general agreement to the MEOSAR D&E Phase II Report provided in document CSC-59/OPN/5/1.

5.2.4 The Council **DECIDED** to approve Issue 1 of document C/S R.023 "Cospas-Sarsat MEOSAR System Demonstration and Evaluation Phase II Report" as provided at Annex 9 to this Summary Record.

5.2.5 The Council **NOTED** from document CSC-59/OPN/Inf.25 (Secretariat) information regarding the status of the MEOSAR D&E Phase and related activities, and an invitation for the Participants that were willing to join the MEOSAR D&E Phase III test campaign to liaise with the Secretariat.

5.3 MEOSAR Operational Transition, Implementation and Schedule (including amendments to document C/S R.012)

5.3.1 The Council **NOTED** from document CSC-59/OPN/5/6 (Canada/France/Russia/USA) proposed updates to document C/S R.012 (MIP) to clarify MEOSAR IOC declaration criteria and that:

a) MEOSAR IOC declaration criteria were defined in section 10.5 of document C/S R.012, "Cospas-Sarsat 406 MHz MEOSAR Implementation Plan";

b) at CSC-57/OPN in December 2016, the Council noted some Participant concerns about MEOLUT location performance for slow-moving beacons, in particular for drifting EPIRBs;

c) CSC-58/CLD noted the Council's general agreement that the MEOLUT location performance issue related to slow-moving beacons should be remedied before entering the MEOSAR IOC Phase;

d) some confusion might exist concerning the scope of MCC and MEOLUT commissioning required for MEOSAR system IOC declaration; and

e) modifications to document C/S R.012 would be required to clarify the MEOSAR IOC entrance criteria regarding location performance for slow-moving beacons, QMS implementation, and MCC and MEOLUT commissioning.

5.3.2 The Council also **NOTED** from document CSC-59/OPN/5/6 that:

a) for the MEOSAR EOC phase, some deviations in MEOLUT performance requirements were agreed in document C/S T.020, "Cospas-Sarsat MEOLUT Commissioning Standard";

b) MEOLUTs commissioned to enter EOC that did not meet the full C/S T.019 performance requirements should be partially recommissioned to verify that full performance was met before they were allowed to enter IOC operations;

c) documents C/S T.019 and C/S T.020 were still incomplete for slow-moving beacons, and should be completed and made applicable to the necessary commissioning of MEOLUTs for IOC; and

d) it was proposed to reflect the Council's agreement regarding the need to remedy the slow-moving beacon location accuracy performance before MEOSAR IOC in document C/S R.012 section 10.5, "Initial Operational Capability".

5.3.3 The Council further **NOTED** from document CSC-59/OPN/5/6 that:

a) Canada, France, Russia and the USA understood from section 10.5 of document C/S R.012 that all nodal MCCs and at least one associated MEOLUT should be commissioned to the MEOSAR IOC level (including against the latest version of document C/S A.003) to declare MEOSAR IOC;

b) concerns were raised regarding the interpretation of items 5 and 6 of the IOC entrance criteria list in section 10.5 of document C/S R.012 that required a partial recommissioning of MCCs and MEOLUTs to meet MEOSAR IOC performance requirements;

c) it was not the intent of items 5 and 6 to require that all MEOLUTs and MCCs currently operating at MEOSAR EOC performance level be commissioned to MEOSAR IOC level before MEOSAR IOC could be declared; and

d) changes were proposed to include the text of current items 5 and 6 of the IOC entrance criteria list in the general text of section 10.5 (i.e., not in the IOC entrance

criteria list), as those items were not entrance criteria for the declaration of MEOSAR IOC.

5.3.4 The Council **NOTED** from discussion of document CSC-59/OPN/5/6 that:

a) it was anticipated that documents C/S T.019 and C/S T.020 could be finalised regarding the slow-moving-beacon matter at JC-32, and appropriate changes approved at the early 2019 Council;

b) consequently, the partial recommissioning for slow-moving beacons could not be anticipated to be conducted before the early 2019 Council; and

c) general agreement to the changes proposed in document CSC-59/OPN/5/6 to section 10.5 of document C/S R.012.

5.3.5 The Council **DECIDED** to approve document Issue 1, Revision 13 of document C/S R.012, "Cospas-Sarsat 406 MHz MEOSAR Implementation Plan", with the additional amendments proposed in document CSC-59/OPN/5/6, changes made to incorporate the SAR/BDS MEOSAR constellation, and the updated date for anticipated IOC entrance, as provided at Annex 8 to this Summary Record.

6: STRATEGIC PLANNING

The Council **NOTED** that while no documents were submitted under this agenda item, the Council recognized that document C/S P.016, "Cospas-Sarsat Strategic Plan", required modification to address the Programme's evolution, including ELT(DT)s, SGBs and the transition to MEOSAR. Work toward provision of a new issue of the Strategic Plan was underway amongst the Parties with a view toward incorporating matters related to Programme evolution. It was expected that this new issue would be available for review at a future meeting.

7: INSTITUTIONAL / ADMINISTRATIVE MATTERS

7.1 Secretariat Activity Report

7.1.1 The Council **NOTED** from document CSC-59/OPN/7/1 (Secretariat) and its presentation a report on Secretariat activities for the period from November 2016 to November 2017, and that the Secretariat:

a) had devoted its major efforts in the period to the explicitly identified priorities of the Programme – MEOSAR evolution, SGB specifications, and ELTs for distress tracking (ELT(DT)s);

b) among the usual complement of Council meetings, had prepared for and supported:

- the JC-31 Meeting held in Montréal, with 261 submitted documents and revisions (more than 20% more than the previous highest total of meeting documents),
- two Task Group meetings,
- a total of 31 days of hosted meetings (or about one meeting-day out of every eight business days) in addition to nine days of directly-supported DDR meetings,
- completed related follow-up actions;

c) had provided organization, technical, administrative and substantive support for 86 correspondence-working-group or teleconference events, at a frequency of about one of every two business days not otherwise involving a Secretariat-supported meeting;

d) had prepared 119 input documents for meetings, totalling 1,126 pages;

e) had performed principal coordination leadership and formal master test-coordination for the MEOSAR D&E, as well as new support as the coordinator for the MEOSAR D&E test T-5 (Independent 2D Location Capability for Operational Beacons), T-5/T-7 (Networked MEOLUT Advantage for test T-5) and T-8 (Combined MEO/GEO Operation Performance);

f) had prepared and produced a total of 25 System documents submitted to CSC-59 for approval, including 24 new issues/revisions of existing documents to incorporate the changes agreed at JC-31;

g) had supported Cospas-Sarsat Participants, Administrations, manufacturers and test facilities on a number of technical and operational matters;

h) had liaised with potential new Participants as a means to facilitate their benefit from, and contributions to, the Programme, including new Participant Qatar;

i) had managed and processed beacon type-approval test reports and application packages for new beacon models or changes to type-approved models, and providing technical support to current and potential beacon manufacturers and test facilities, including a large number of pre-application consultations, all amounting to over 89 report reviews and other transactions during the covered period; and

j) responded to daily requests for information, advice or support from Participants, Administrations, System users, beacon owners, equipment manufacturers, etc.

7.1.2 The Council further **NOTED** from document CSC-59/OPN/7/1 and its presentation that organization of meetings by the Secretariat involved extensive preparations and follow-up, including meeting logistics, support work for delegations, and documentation, and, in particular, that:

a) for the four weeks prior to each meeting the Secretariat processed participant contributions (including reviewing and recommending editorial adjustments for clarity, agenda assignment, formatting, publishing, noting and work-plan assignment);

b) in advance of this four-week period, the Secretariat prepared all of the documents for which it was responsible, more than any other entity that participated in meetings;

c) for the period following the meeting, the Secretariat proofread the reports or records of the meeting and, in the case of the Joint Committee meeting, simultaneously prepared the Red Books for submission to Council;

d) with the current schedule of annual meetings, these activities commonly occurred simultaneously for different meetings; and

e) an attachment to the document showed a 2017 calendar of activities that related only to meeting document preparation and processing, comprising virtually the entire year, and another attachment that illustrated the steadily-growing workload.

7.1.3 The Council **NOTED** from discussion of document CSC-59/OPN/7/1:

a) a comment expressing particular appreciation for the amount of work done by the Secretariat in supporting Participants engaging in important Programme work through informal correspondence working groups; and

b) a view that the Programme, through its Secretariat and Parties, was considered to provide exceptional and invaluable support to Participants in all corners of the world.

7.1.4 The Council **NOTED** its appreciation to the Secretariat for its diligence and hard work during a period of intense and very important activity.

STATUS OF THE COSPAS-SARSAT HISTORY PROJECT

7.1.5 The Council **NOTED** from document CSC-59/OPN/Inf.6 (Secretariat) information on the status of the Cospas-Sarsat History project, including that, as requested by the Council at CSC-57, the translation into the French and Russian languages had been organized by the Secretariat, the French language translation had been completed, and the Russian language version was estimated to be about 65% complete.

7.1.6 The Council **NOTED** from document CSC-59/OPN/Inf.16 (UAE) that the UAE had translated the document: "The History and Experience of the International Cospas-Sarsat Programme for Satellite-Aided Search and Rescue" into Arabic, and the request that the Secretariat publish and distribute the translated document, as appropriate, to all interested parties.

7.1.7 The Council **NOTED** from discussion of document CSC-59/OPN/Inf.16 general agreement to invite:

a) the UAE to provide a PDF copy of the Arabic translation of the History document to the Secretariat; and

b) the Secretariat to publish the Arabic translation of the History document on the Cospas-Sarsat website and distribute the translated document, as appropriate, to all interested parties.

7.2 Final 2016 Financial Statements on the Common Costs of the Programme

7.2.1 The Council **NOTED** from document CSC-59/OPN/7/2 (Secretariat) and its presentation the status of the financial statements of the International Cospas-Sarsat Programme for the fiscal year (FY) ending 31 December 2016, and that:

a) the Parties' and non-Party Participants' contributions to 31 December 2016 were fully paid;

b) the 2016 operating expenditure total of CAD 3,023,869, which was 2% below the approved expenditure plan amount of CAD 3,085,505;

c) the net deficit for the year was CAD 598,618;

d) the balance of Programme funds amounted to net assets of CAD 4,114,630 and an operating reserve of CAD 3,527,535; and

e) the 2016 audited financial statements of the Programme, available on the CSC-59 Open Meeting webpage under "Other Documents", presented fairly, in all material respects, the financial position and results of operations of the Programme through 31 December 2016.

7.3 Provisional 2017 Statements on the Common Costs of the Programme

7.3.1 The Council **NOTED** from document CSC-59/OPN/7/3-Rev.1 (Secretariat) the status of contributions and unaudited 2017 (and projected January and February 2018) expenditures and that:

a) contributions were paid in full for all Parties to 31 December 2017;

b) the balance due from non-Party Participants at 31 December included the 2017 outstanding contribution from Qatar because it only became associated at the end of 2017, and a minor balance of CAD 1,572 due from Greece because of a currency exchange-rate mismatch;

c) the inclusion of January and February 2018 in the attached Table 2 of the document was due to the fact that the CSC-59 Open Session was being held in 2018;

d) the unaudited 2017 operating expense total of CAD 2,971,453 was 5% below the CSC-57 approved plan amount of CAD 3,170,990; and

e) the operating expense total was CAD 561,930 more favourable than the long-term simulation of expenditures and funding of document CSC-53/OPN/7/6-Rev.1 accepted by CSC-53/OPN.

7.3.2 The Council **NOTED** from discussion of document CSC-59/OPN/7/3-Rev.1 information from the Secretariat that the final figures could only be prepared immediately prior to the annual audit and might undergo small changes during the audit process.

7.4 2018 Secretariat Work Plan and Spending Plan

7.4.1 The Council **NOTED** from document CSC-59/OPN/7/4-Rev-1 (Secretariat) the draft 2018 Work Plan for the Secretariat, including the recommendation that the Council

review, amend as appropriate and approve the draft 2018 Work Plan for the Cospas-Sarsat Secretariat, which included the Head of Secretariat objectives for 2018.

7.4.2 The Council further **NOTED** from document CSC-59/OPN/7/4-Rev-1 and its presentation:

a) the invitation to decide on 2018 objectives for the Head of Secretariat and the meetings anticipated to be supported or attended by the Secretariat in 2018;

b) the invitation to review, amend as appropriate, and approve the draft Secretariat Work Plan for 2018;

c) the invitation for the Council to request the Chair of the Council to sign the 2017 Work Plan on behalf of the Programme;

d) that the proposed 2018 objectives reflected the usual priorities for Secretariat activity (Cospas-Sarsat meetings; support to Participants, manufacturers and Administrations; international liaison; website; IBRD; etc.) and current developments, including MEOSAR, specifications for SGBs, and ELTs for distress tracking;

e) that the 2018 Work Plan required the Head of Secretariat to manage the Secretariat in accordance with Council guidance provided in documents C/S P.012, "Cospas-Sarsat Secretariat Management Guide", and C/S P.013, "Cospas-Sarsat Secretariat Staff Handbook", and to support the Cospas-Sarsat Council in the management of the Programme activities in accordance with the policies described in document C/S P.011, "Cospas-Sarsat Programme Management Policy";

f) that the draft 2018 Work Plan for the Secretariat detailed other specific objectives for the Head of Secretariat, the spending limit approved by the Council, the list of 2018 Cospas-Sarsat meetings to be supported by the Secretariat and a preliminary list of other meetings anticipated to be attended by Secretariat staff; and

g) that the 2018 Work Plan should be completed materially within the Spending Plan approved by the Council.

7.4.3 The Council **NOTED** from discussion of document CSC-59/OPN/7/4-Rev.1:

a) information from the Secretariat that the Cospas-Sarsat meetings shown at Attachment 1, Annex 1 of the document needed to be aligned with the decisions of the Council for 2018 meetings (as it had been published before the Council meeting);

b) information from the Secretariat that the 2018 Work Plan included activities for January and February 2019 since there would be no Open Council Meeting before the end of 2018;

c) a view that the list of other meetings at Attachment 1, Annex 2 of the document did not include a verification visit to TUV Product Services in the UK, and that since TUV was actively preparing to test SGBs, and planned to seek approval for SGB testing during 2018, the 2018 Work Plan should be revised to include this visit to TUV; and

d) general agreement to invite the Secretariat to provide revised figures for the Spending Plan related to Council decisions (see section 7.5.3 of this Summary Record), and to provide this revised plan in the Work Plan.

7.4.4 The Council **DECIDED** to:

a) approve the 2018 Work Plan and its attached Spending Plan, with amendment of Annexes 1 and 3 of the document to be in alignment with the meeting schedule decided by the Council and the related cost adjustments;

b) authorize the Council Chair to sign the 2018 Work Plan on behalf of the Council, as provided at Annex 18 to this Summary Record.

7.5 Funding Arrangements for the Common Costs of the Programme

7.5.1 The Council **NOTED** from document CSC-59/OPN/7/5 (Secretariat) the 2018, and January and February 2019, projected expenditures, and that:

a) the 2018 expenditures were anticipated to total CAD 3,401,948;

b) the January and February 2019 expenditures were anticipated to total CAD 579,445;

c) the 2018 draft expenditures were based on the provisional assumptions of the following meetings and their respective venues:

- Open and Closed Council meetings at CSC-59 held in Montréal,
- one Task Group (TG) provisionally anticipated to take place in Montréal,
- one Experts Working Group provisionally anticipated to take place in Montréal,
- one Task Group (TG) meeting of six-day duration provisionally anticipated to take place in Prague,
- JC-32 Meeting of nine-day duration provisionally anticipated to take place in the United Arab Emirates,
- Open and Closed Council meetings at the CSC-60 Session provisionally anticipated to take place in Montréal in 2019; and

d) the expenditures for meetings and travel were provisional and contingent on where Council decided to hold the meetings.

7.5.2 The Council further **NOTED** from the presentation of document CSC 57/OPN/7/5 that:

a) the various non-routine spending items were discussed separately in the context of documents devoted to those specific items;

b) the income and expenditure forecast at Table 1 of the document projected a deficit for 2018 of CAD 868,948;

c) the income and expenditure forecast included an additional annual contribution due to the addition of a new Participant (Qatar); and

d) compared to the long-term modelling, the 2018 deficit was projected to be approximately CAD 224,000 more favourable than what was projected in the modelling (see document CSC-53/OPN/7/6 Rev.1).

7.5.3 The Council further **NOTED** from discussion of document CSC-59/OPN/7/5:

a) information from the Secretariat about revisions to the 2018 Spending Plan proposed by the Secretariat to take into account the final decisions of the Council regarding the venues for 2018 meetings;

b) information from the Secretariat that the net difference in the spending plan due to those revisions was anticipated to be CAD 24,500; and

c) general agreement to invite the Secretariat to provide the revised figures for the Spending Plan, to include the meeting-cost adjustments related to hosting the JC-32 in Montreal, as well as a reduction in the travel expenditures, since the United Arab Emirates had withdrawn its hosting invitation subsequent to the publication of the Spending Plan.

7.5.4 The Council **NOTED** the adjusted expenditures at Annex 17 to this Summary Record (see section 7.4.4 of this Summary Record for the decision related to this item).

7.6 Programme Management Policy (Document C/S P.011)

AMENDMENTS TO REFLECT CURRENT PRACTICES: SPACE AND GROUND SEGMENT STATUS

7.6.1 The Council **NOTED** from document CSC-59/OPN/7/6 (Secretariat):

a) that JC-31 had requested that the Secretariat develop amendments to document C/S P.011, "Cospas-Sarsat Programme Management Policy", section 7.1.3, Cospas-Sarsat Documents, describing procedures for modifying annexes to System documents to update Space and Ground Segment status;

b) that information on the status and specifics of Space and Ground Segment status had been removed from System document annexes some years ago; and

c) proposed amendments to document C/S P.011 to reflect current practices of hosting descriptions of the Space and Ground Segment components on the Cospas-Sarsat website.

7.6.2 The Council further **NOTED** from document CSC-59/OPN/7/6 the recommendation that it:

a) review and amend as necessary the proposed amendments to document C/S P.011; and

b) approve the amendment to document C/S P.011, "Cospas-Sarsat Programme Management Policy", section 7.1.3, Cospas-Sarsat Documents, to reflect current practices of hosting descriptions of the Space and Ground Segment components on the Cospas-Sarsat website instead of in annexes to System documents.

7.6.3 The Council **NOTED** general agreement to the amendments to document C/S P.011, "Cospas-Sarsat Programme Management Policy", section 7.1.3, Cospas-Sarsat Documents, to reflect current practices of hosting descriptions of the Space and Ground Segment components on the Cospas-Sarsat website, as shown at Annex 7 to this Summary Record.

SECOND-GENERATION BEACONS AND MEOSAR DOCUMENTATION

7.6.4 The Council **NOTED** from document CSC-59/OPN/7/7 (Secretariat) proposed amendments to document C/S P.011, "Cospas-Sarsat Management Policy", to include:

a) references to both SGBs and MEOSAR documentation, as appropriate; and

b) editorial amendments to several sections of the document, to align the document with current Programme references and practices.

7.6.5 The Council also **NOTED** from document CSC-59/OPN/7/7 the recommendations that it:

a) note the proposals of the Secretariat for modifications to sections of document C/S P.011, "Cospas-Sarsat Management Policy", to incorporate references to existing and planned System documentation for MEOSAR and second-generation beacons;

b) note the invitation to Space Segment Providers to provide appropriate descriptions of their MEOSAR contributions in the corresponding sections of document C/S P.011;

c) review and amend, as appropriate, the draft amendments provided; and

d) approve the amendments to document C/S P.011, "Cospas-Sarsat Management Policy", as Issue 2.

7.6.6 The Council **NOTED** from discussion of document CSC-59/OPN/7/7 general agreement to:

a) accept the amendments to sections of document C/S P.011, "Cospas-Sarsat Management Policy", that incorporated references to existing and planned System documentation for MEOSAR and SGBs, and the editorial amendments, as submitted; and

b) invite Space Segment Providers to provide appropriate descriptions of their MEOSAR contributions in the corresponding sections of document C/S P.011.

7.6.7 The Council **NOTED** general agreement to the amendments to document C/S P.011, "Cospas-Sarsat Programme Management Policy", to incorporate references to existing and planned System documentation for MEOSAR and SGBs, and further editorial amendments, as shown at Annex 7 to this Summary Record.

DOCUMENT SUBMISSION DEADLINES

7.6.8 The Council **NOTED** from document CSC-59/OPN/7/8 (Canada/France/Russia/USA) proposed modifications to document C/S P.011, "Cospas-Sarsat Programme Management Policy", regarding deadlines for submission of meeting documents and that:

a) in recent years, the number of documents submitted to Joint Committee meetings had increased to over 200, most of which were submitted for publication on or near the document submission deadline;

b) after allowing three to five days for the Secretariat to process and publish the documents, an insufficient amount of time was available before the start of the meeting for translation and internal consideration of all documents; and

c) a proposal was made to amend document C/S P.011 to add another calendar week to the Joint Committee submission deadlines for working papers, revisions and information papers.

7.6.9 The Council **NOTED** from discussion of document CSC-59/OPN/7/8 general agreement that document C/S P.011 should be amended to specify Joint Committee document submission deadlines of six weeks in advance of the meeting for bulky papers and new System documents, five weeks for working papers, three weeks for information papers and two weeks for response and revision papers.

7.6.10 The Council **NOTED** general agreement to the amendments to document C/S P.011, "Cospas-Sarsat Programme Management Policy", as shown at Annex 7 to this Summary Record to include new document submission deadlines.

COSPAS-SARSAT TRADEMARKS PROTECTION

7.6.11 The Council **NOTED** from document CSC-59/OPN/7/9 (USA/Secretariat) a proposed fair-use policy to be applied by the Programme to the "Cospas-Sarsat" trademarks, and recalled that:

a) CSC-57 had invited the Secretariat to prepare a letter to all beacon manufacturers notifying them that use of Cospas-Sarsat trademarks was restricted to type-approved beacons or beacons for which letters of compatibility had been issued;

b) the Secretariat had introduced a procedure whereby TACs and letters of compatibility would explicitly authorize use of the Programme trademarks for the specified product; and

c) CSC-58 had invited the Parties to express views and provide advice to the Secretariat on draft amendments to document C/S P.011, "Cospas-Sarsat Programme Management Policy".

7.6.12 The Council **NOTED** from discussion of document CSC-59/OPN/7/9:

a) that the proposed fair-use amendment to document C/S P.011 included a new section 6.9 with specimens of:

- trademarks currently registered,
- 'Heritage Service Marks' whether registered or not;

b) that the proposed fair-use amendment might not be sufficient to prevent the use by some in a way that might be adverse to the reputation of the Programme;

c) that one of the specimens, the "heritage" logo, that included the flags of the Party-countries, had not been possible to register because consent from the countries of the flags used would be required; and

d) information from the USA that the language used in the two fair-use elements was drawn from established terms used for educational materials in the United States and, therefore, should not be considered risky.

7.6.13 The Council further **NOTED** from the discussion of document CSC-59/OPN/7/9 the views expressed by RTCM that:

a) the proposed amendment which would not permit 'general marketing' use of the trademarks was overly restrictive;

b) the fair-use statement should be more specific as to what was meant by 'fair-use' as it did not extend to general marketing materials of a manufacturer in cases where non-approved devices were included in the materials;

c) the fair-use statement should be extended to include manufacturers since they often provided training and education material to distributors, dealers, end users and the media;

d) explicit pre-approval of trademarks 60 days prior to use would simply result in them not being used at all, thus reducing awareness of the logos, which would be detrimental to the Programme overall; and

e) the approved text in document C/S P.011 should be circulated to interested parties, so that everyone became aware of the 'fair-use' doctrine.

7.6.14 The Council **NOTED** general agreement to the amendments to document C/S P.011, "Cospas-Sarsat Programme Management Policy", section 6.9, Protections and Management of Cospas-Sarsat Trademarks and Service Marks, defining a fair-use doctrine as shown at Annex 7 to this Summary Record.

7.6.15 The Council **DECIDED** to approve document C/S P.011, Issue 2, as amended and shown at Annex 7 to this Summary Record.

7.6.16 The Council **DECIDED** to invite RTCM to submit a working paper to propose amendments to the new section 6.9, Protections and Management of Cospas-Sarsat Trademarks and Service Marks, of document C/S P.011 for further consideration at the next Council Session.

8: LIAISON WITH INTERNATIONAL ORGANISATIONS

8.1 International Maritime Organization (IMO)

8.1.1 The Council **NOTED** from document CSC-59/OPN/8/1 (USA) a status report on efforts to update the IMO EPIRB performance standards, observations at recent IMO meetings, and the document's recommendations that it:

a) note the proposed new definition of EPIRB to be included in the SOLAS regulation IV/2, as well as the consequential amendments to regulation IV/7, and consider if the removal of the word 'satellite' in the new definition of EPIRB would raise any concerns or issues for the Programme;

b) note the information presented regarding the consequential amendments to other existing IMO instruments as a result of the modernization of the GMDSS and consider appropriate Cospas-Sarsat inputs on beacon maintenance and service intervals for inclusion in the revision of circulars MSC/Circ.1039, "Guidelines for shore-based maintenance of satellite EPIRBs" and MSC/Circ.1040/Rev.1, "Guidelines on annual testing of 406 MHz EPIRBs" for submission to the IMO/ITU Experts Group in September 2018;

c) invite Participants to review these circulars and provide recommendations or suggestions to the USA (by email to Edwin.B.Thiedeman@uscg.mil) for consideration in the update of the circulars;

d) invite Participants to monitor the review of circular MSC/Circ.803, "Participation of non-SOLAS ships in the GMDSS", to ensure that any proposed changes did not generate conflict with the Cospas-Sarsat goals and objectives as set forth in document C/S P.016 (strategic plan);

e) note that RTCM Standard 11000.4 described use of the AIS message 14 to transmit the Hex ID of a 406-MHz beacon when part of an AIS/EPIRB combined device, including appropriate updates in the IMO EPIRB Performance Standard;

f) invite interested Participants to raise to an appropriate international standards body or organization the need to develop new RLS standard symbols and promote their use;

g) note the view of the JWG that beacons with RLS functionality should not be available for sale or use until an RLS constellation provided global coverage;

h) invite Participants in conjunction with their Administrations to review and consider the methodology for implementing an AIS locating signal in an EPIRB as presented in the RTCM standard 11000.4 and encourage broader recognition and potential adoption in national or international standards as appropriate; and

i) consider the information and outcomes observed and reported by participants at JC-31 of the meetings of the IMO/ITU Experts Group, the ICAO/IMO JWG-SAR and the NCSR Sub-Committee while considering the work plan for 2018.

8.1.2 The Council **NOTED** from document CSC-59/OPN/Inf.5 (Secretariat), and its presentation, a report of the fourth session of the IMO's Sub-committee on Navigation,

Communications, and Search and Rescue (NCSR 4), and related issues, and that the areas of principal interest not otherwise already covered in the Council meeting, were:

a) the request pending from NCSR 3 that Cospas-Sarsat conduct an analysis of a proposal for the distribution of GMDSS digital distress alerts in addition to the current 406 MHz beacon alerts, with expected feedback from the Cospas-Sarsat Council in 2018; and

b) the Sub-Committee's request urging Member States and organizations to involve maritime SAR experts in functions, meetings and other relevant events, including those organised by Cospas-Sarsat, with a view to enhancing the development and implementation of joint initiatives taken by IMO and ICAO, and that this request appeared to have been fruitful in having additional SAR experts attend JC-31.

8.1.3 The Council **NOTED** from discussion of document CSC-59/OPN/8/1:

a) a view that it might not be quite appropriate for the Council to make the invitation in recommendation (c) of the document, as this might create issues with some national protocols, and instead the Council could merely acknowledge the invitation of the United States;

b) that concerning recommendation (g), the observation that the Galileo constellation already provided global coverage for the RLS;

c) concerns with some of the proposals being made to the IMO as explained in the document, but that these might be better discussed in conjunction with document CSC-59/OPN/5/2 (see section 5.1.1 of this Summary Record);

d) information about trials being conducted by the University of Stavanger regarding successful use of 121.5 MHz homing signals with a 33% duty cycle in a maritime environment, and a request that two related documents be placed in the "Other Documents" section of the CSC-59 Open Meeting webpage, which was done; and

e) general agreement of the Council to express its appreciation to the United States for its diligence in following these very important matters at the IMO.

8.1.4 The Council **NOTED** from document CSC-59/OPN/Inf.12 (Secretariat) the exchanges of correspondence with IMO and ICAO related, respectively, to distribution of non-406-MHz alerts and operation of an autonomous distress tracking (ADT) data repository.

8.2 International Civil Aviation Organization (ICAO)

PRESENTATION BY ICAO

8.2.1 The Council **NOTED** from document CSC-59/OPN/8/2 (ICAO), and its presentation:

a) ICAO's view of the functional requirements for the Distress Tracking Data Repository (DTR);

b) a reminder of the 26 July 2016 letter from the director of the ICAO Air Navigation Bureau sent to the Council formally requesting that Cospas-Sarsat consider serving as the host of a central repository for Autonomous Distress Tracking (ADT) data;

c) a request that Cospas-Sarsat inform ICAO of its decision regarding hosting the DTR no later than 30 March 2018;

d) the history of developments that led to the ICAO request, including the loss of Malaysian Airlines flight MH 370;

e) the decision of ICAO to make the ADT standards technology neutral;

f) that the GADSS Advisory Group (GADSS-AG) had proposed the DTR; and

g) that further information was provided in the White Paper developed to explain the DTR and related concepts.

8.2.2 The Council further **NOTED** a presentation by ICAO that was made available under "Other Documents" on the CSC-59 Open Meeting webpage.

8.2.3 The Council **NOTED** from discussion of document CSC-59/OPN/8/2 and the presentation:

a) information from ICAO that the target date for the DTR of 2019 was for development of a prototype, to finalize it in 2020 and be able to begin formal operations in 2021;

b) a view that it was now clear that the ConOps was not a mandatory specification document, but guidance, and that the DTR was a mechanism or preferred solution that was not a requirement in the ICAO sense;

c) information from ICAO that there was a mandate from the Air Navigation Commission to form a task force to develop the standards and Procedures for Air Navigation Services (PANS) procedures to standardize the delivery of distress tracking information, and such procedures would be considered and approved through the normal processes;

d) information from ICAO that the requirement for capability for autonomous operation was a matter of being resilient to power loss as a system, and that each component of the system (e.g., the navigation component and the distress transmitter component) had to be resilient to power loss; and

e) that there was an obligation for the Council to respond to ICAO's request by 30 March 2018, which might include, amongst other things, a request for an extension.

DEVELOPMENT OF ICAO DOCUMENT 10054 AND POSSIBLE IMPLICATIONS ON ELT(DT)S

8.2.4 The Council **NOTED** from document CSC-59/OPN/Inf.27-Corr.2 (Secretariat) a summary of the progress made toward the development of a new ICAO document 10054, "Manual on Location of Aircraft in Distress and Flight Recorder Data Recovery", and that:

a) in 2017 a group of representatives from national agencies, industry and international organizations had drafted document 10054, which was aimed at providing guidance for States to be able to comply with the new ICAO Standards and Recommended Practises (SARPs) concerning the location of aircraft in distress for which a primary principle was autonomous distress tracking (ADT) and flight recorder data recovery (FRDR);

b) the group had recently completed its work and it was expected that an advance unedited version of the document 10054 would be made available in early February 2018 with a final edition of document 10054 planned to be published within 6 months;

c) in general, the guidelines provided in document 10054 were in accordance with the requirements currently specified for ELT(DT)s, which should position the new beacon type among the preferred solutions to comply with the ICAO ADT requirements specified in Annex 6;

d) Cospas-Sarsat Participants should nevertheless review the requirements currently specified for ELT(DT)s against the guidelines provided in document 10054 to ensure that the current requirements would allow ELT(DT)s to comply with the ICAO requirements in a competitive way, especially with regards to the duration that an ELT(DT) would need to operate without power; and

e) the review of the ELT(DT) specification against the guideline of document 10054 should be done as soon as possible, to allow for possible modifications to FGB and SGB specifications and type approval procedures to be reviewed at a Cospas-Sarsat Technical meeting that would be held in April 2018, and to ensure that possible modifications to Cospas-Sarsat System documents would be known to beacon manufacturers as early as possible, thus allowing for the ELT(DT)s made available at the beginning of 2019 to be best suited for ICAO needs.

8.3 International Telecommunication Union

The Council **NOTED** that no documents were submitted under this agenda item.

8.4 Other International Organisations

RECENT JOINT RTCA SC-229/EUROCAE WG-98 MEETINGS

8.4.1 The Council **NOTED** from document CSC-59/OPN/Inf.26 (Secretariat) the summary of the progress made since December 2016 by the Joint RTCA SC 229/EUROCAE WG-98 working group to develop new ELT requirements, and that:

a) the development of revised Minimum Operational Performance Standards for 406-MHz beacons from RTCA SC-229 (document DO-204B) and EUROCAE WG-98 (document ED-62B) had progressed well since CSC-57 and a draft version of document ED-62 B had been reviewed by the members of the joint committee at the most recent meeting held in December 2017;

b) the development of documents DO-204B and ED-62B was essential to ensure that new types of ELTs (specifically ELT(DT) and SGB ELT) could be deployed in the

shortest time frame possible, consistent with the MEOSAR IOC or FOC dependence on certain features, the Cospas-Sarsat type approval of new models and the latest ICAO provisions related to the location of an aircraft in distress in Annex 6, Part I, 6.18.1 and 6.18.2;

c) based on the outcomes of the most recent RTCA SC-229 and EUROCAE WG-98 meetings, it was now planned that the availability of documents DO-204B and ED-62B would be approximately 6 months later than the dates discussed at CSC-57;

d) the availability of these documents in the Fall of 2018 would put pressure on the availability of ELT(DT)s in early 2019 as beacon manufacturers would need to take note of the latest national requirements, design beacons to comply with the new requirements, and verify the compliance of these beacons to either DO 204 or ED-62 in the span of a few months, which would create a peak of activities during that period to get beacon models approved on time to be part of the solutions considered by aircraft OEMs to comply with the latest ICAO ADT requirements; and

e) Participants should consider the impact that the delay in the availability of DO-204B and ED-62B documents would have on the availability of future ELTs on the market and plan accordingly.

8.4.2 The Council also **NOTED** from document CSC-59/OPN/Inf.26 and its presentation that:

a) the EUROCAE WG-98 would soon initiate new work on the development of Minimum Aviation System Performance Standards (MASPS) for the RLS in April 2018; and

b) a summary of the activities made by an AEEC group that was working to define the ARINC characteristics, architectures and guidelines for the future ADT systems had been presented at the Joint RTCA SC 229/EUROCAE WG-98 working group meeting held in December 2017 and that the group was planning on completing its work on ADT systems by the beginning of 2019.

9: REVIEW OF ACTIONS FROM THE CSC-57 OPEN MEETING

9.1 The Council **NOTED** from review of document CSC-59/OPN/9/1 (Secretariat) that the requested actions for the Secretariat and Participants arising from CSC-59/OPN/SR that actions related to the decisions made at CSC-57/OPN were completed before the Council, with the exception of the following items that were considered as "on-going" or "pending":

a) in CSC-57/OPN/SR, sections 2.1.2 (a) and (b), to invite:

- all Participants to review document C/S P.010, available on the Cospas-Sarsat website, and formally notify the Secretariat on a regular basis of any change of Representative or details of their cooperating agency,

- Finland, Thailand, Tunisia and Viet Nam to provide names of their Representatives to the Cospas-Sarsat Programme, in addition to their positions, for further inclusion by the Secretariat in document C/S P.010, for the purpose of improving communication with these Participants;

b) in CSC-57/OPN/SR, section 3.2.75 (b), to invite:

- the Secretariat to regularly propose amendments to document C/S G.004[, "Cospas-Sarsat Glossary",] in order to incorporate the new terms, definitions and acronyms that would be defined further in the Cospas-Sarsat documentation;

c) in CSC-57/OPN/SR, section 3.2.81 to invite:

- every MCC operator that had not already done so to send an appropriate SIT message to inform the Ground Segment, in addition to notifying the Secretariat by email, of its preferences regarding the general rule to be followed about continued transmission after position confirmation during the EOC period;

d) in CSC-57/OPN/SR, section 4.2.8 to invite:

- Ground Segment Providers to coordinate with their LEOLUT manufacturers and report at future meetings if any changes to the LEOLUT software would be needed to properly process COSPAS SARP-2 PDS data as proposed in document C/S T.003 Issue 1 - Revision 3;

e) in CSC-57/OPN/SR, section 5.1.15 to invite:

- participants to further review the definition of the test LP3 in document C/S T.020, and propose modifications, as appropriate;

f) in CSC-57/OPN/SR, section 5.3.6 (a) and (b), to invite:

- Ground Segment Operators to carefully consider, or reconsider, their decision to not receive continued transmission alert data after position confirmation,
- Participants to evaluate the location accuracy and related EHE values for slow-moving beacons activated during the MEOSAR D&E test T-5;

g) in CSC-57/OPN/SR, section 5.3.9:

- to invite France, Russia and the USA to send SIT 605 messages to MCCs indicating which MEOSAR satellites were operational and could be used by commissioned MEOLUTs, as specified in document C/S T.017; and

h) in CSC-57/OPN/SR, section 5.3.13 (a) and (b), to advise Ground Segment Operators of the need to:

- prepare for changes required for the transition to MEOSAR EOC (see sections 3.2.28 and 3.2.76 of this Summary Record),
- implement an MCC capable of processing merged LEOSAR, GEOSAR and MEOSAR data (LGM MCC) and RLS beacons by year-end 2018.

10: FUTURE COSPAS-SARSAT MEETINGS - DATES, VENUES, CHAIRPERSONS AND AGENDA/TERMS OF REFERENCE

PROVISIONAL AGENDA AND CHAIRS FOR NEXT OPEN MEETING OF THE COUNCIL

10.1.1 The Council **NOTED** from document CSC-59/OPN/10/2 (Secretariat) and its presentation a draft provisional agenda for the next Open Meeting of the Council, and that the Secretariat had made the effort to better harmonize the agenda by consolidating similar items, updating or adding items to reflect recent and anticipated Programme developments, and eliminating items that historically had no paper contributions made under them.

10.1.2 The Council **DECIDED** to approve the provisional agenda for the next Open Meeting of the Council in document CSC-59/OPN/10/2, as shown at Annex 23 to this Summary Record.

10.1.3 The Council **NOTED** that Rule 5 of Annex B, "Rules of Procedure for the Cospas-Sarsat Council", of document C/S P.011, "Cospas-Sarsat Management Policy", specified that "a Chairperson and Vice Chairperson shall be selected from among the Representatives of the Parties on a rotational basis" and that "the Vice Chairperson will normally succeed the Chairperson in office."

10.1.4 The Council **DECIDED** to select Mr. Christopher O'Connors (USA) as the Chairperson for the upcoming term of office, and Mr. Michael Donald (Canada) as the Vice Chairperson for the upcoming term of office.

DOCUMENT TEMPLATES AND REPORTING AT FUTURE COUNCIL SESSIONS

10.1.5 The Council **NOTED** from document CSC-59/OPN/Inf.28 (Secretariat), and its introduction:

a) a summary of previous work regarding input and information document templates and the resulting Council decisions at the CSC-55 Closed Meeting regarding changes to the conduct of Joint Committee meetings;

b) that new document templates and reporting structure had been utilized successfully at several Programme meetings, starting with JC-30, in 2016 and 2017;

c) draft templates for CSC-60 information and working papers and a mocked-up CSC-57 Report section, developed by the Secretariat in accordance with the guidance provided by the Council (CSC-58);

d) that the Closed Meeting of CSC-59 had approved the implementation of the new templates and methodology for noting papers in the meeting summary record; and

e) the implementation methodology to be used with respect to document-submission templates and noting of input documents in the Council session summary record.

10.2 2018 Joint Committee Meeting

10.2.1 The Council **NOTED** from document CSC-59/OPN/10/3 (JC-31) a draft provisional agenda for the thirty-second meeting of the Joint Committee (JC-32).

10.2.2 The Council **NOTED** from document CSC-59/OPN/10/8-Rev.1 (Secretariat) in response to document CSC-59/OPN/10/3, an alternative draft provisional agenda for JC-32, and that:

a) the Secretariat had made the effort to better harmonize the agenda by consolidating similar items, updating or adding items to reflect recent and anticipated Programme developments, and eliminating items that historically had no paper contributions made under them; and

b) the draft provisional agenda in document CSC-59/OPN/10/8-Rev.1 had been reviewed by the Closed Meeting of the CSC-59 session, and had been supported with the addition of the parenthetical addition "(ICAO, IMO, ITU, etc.)" to item 11.

10.2.3 The Council **DECIDED** to approve the provisional agenda in document CSC-59/OPN/10/8-Rev.1 for JC-32, as shown at Annex 22 to this Summary Record.

10.3 2018 Task Group and Experts Working Group Meetings

10.3.1 The Council **NOTED** from document CSC-59/OPN/4/7-Rev.1 (UK/RTCM) information related to use of PLBs in maritime environments, and that:

a) there was growing adoption and use of PLBs on lifejackets and personal flotation devices (PFDs) around the world;

b) as a result of the above, the development of a procedure for the approval of PLBs in a maritime environment should be a high priority item for the Programme; and

c) the issue should be considered as part of the agenda for the technical meeting on SGBs and SGB/FGB ELT(DT)s, and/or as a high-priority matter for JC-32, such that it could be possible to agree, at least, on an interim procedure for the approval of PLBs in a maritime environment at JC-32 for consideration by the Council at CSC-60.

10.3.2 The Council **NOTED** from discussion of document CSC-59/OPN/4/7-Rev.1 various views that:

a) participants were interested in working with the UK and RTCM on the matter;

b) at least one Participant was seeing a high usage of PLBs in the maritime environment, with an expected continuing increase and, therefore, progress on the issue was important;

c) the UK was not aware of any imminently-planned testing of PLBs in a maritime environment;

d) the U.S. Coast Guard was working with its research-and-development centre concerning the issue, but testing activities had not yet been resourced;

e) current type-approval procedures made provisions for novel beacon features or non-standard usage scenarios, and these had been successfully applied for PLBs in a maritime environment on two prior occasions, with two other applications pending, but that more regularized procedures would be desirable;

f) it was unclear whether the matter was appropriate for the technical meeting on SGBs and SGB/FGB ELT(DT)s, but that it might be under some circumstances and subject to the decisions of the meeting chair;

g) the matter should be brought to the attention of JC-32, but in terms of its "high" priority, it should be understood that the existing Programme priorities of MEOSAR evolution, ELT(DT)s and SGBs were still of a higher priority; and

h) coordination about the issue among participants in advance of the IMO NCSR meeting would be beneficial, and that the UK had offered to begin the contact with the IMO.

10.3.3 The Council **DECIDED** to invite:

a) the UK, RTCM and other interested participants to make submissions, as appropriate, to future meetings, particularly JC-32; and

b) participants that would be attending the NCSR meeting to coordinate among one another when managing the question at that meeting.

10.3.4 The Council **NOTED** from document CSC-59/OPN/10/4 (JC-31) a draft proposed terms of reference for a 2018 task group meeting on SGBs and SGB/FGB ELT(DT)s.

10.3.5 The Council **NOTED** from document CSC-59/OPN/10/5 (JC-31) and its presentation proposed topics for a 2018 task group meeting, and that there had not been sufficient time during JC-31 to develop terms of reference from the list of topics for the proposed meeting.

10.3.6 The Council **NOTED** from document CSC-59/OPN/10/7-Corr.1 (USA) in response to documents CSC-59/OPN/10/4 and CSC-59/OPN/10/5 proposed:

a) modifications to the proposed terms of reference for the proposed TG-1/2018; and

b) terms of reference for the proposed TG-2/2018 based on the topics proposed in document CSC-59/OPN/10/5.

10.3.7 The Council **NOTED** from discussion of document CSC-59/OPN/10/7-Corr.1 that:

a) the proposed modifications to the proposed terms of reference for the proposed TG-1/2018 were superseded by successful work on a four-Party contribution regarding the matter (see section 10.3.8 of this Summary Record);

b) the proposed terms of reference for the proposed TG-2/2018 based on the topics proposed in document CSC-59/OPN/10/5 were a useful basis for further refinement of terms of reference, but could not be agreed at this time as written; and

c) during further consideration of the proposed terms of reference for the proposed TG-2/2018, item 4 should be updated to align properly with the status of MEOSAR D&E work expected at the time of the meeting.

10.3.8 The Council **NOTED** from document CSC-59/OPN/10/10 (Canada/France/Russia/ USA) in response to document CSC-59/OPN/10/4, and its presentation, alternative proposed terms of reference for the first technical meeting in 2018, and that:

a) it should be convened as an experts working group (EWG), to allow for the results of the meeting to be reported directly to the Council in addition to the Joint Committee; and

b) the terms of reference were the same as those that had been proposed by JC-31 for a TG-1/2018, with the exception of the agenda item on "MEOSAR QMS Development", which was not considered a priority issue at this time.

10.3.9 The Council **NOTED** from discussion of document CSC-59/OPN/10/10:

a) that because of constraints of ICAO timelines for GADSS implementation, ELT(DT)s should receive priority treatment during the proposed EWG;

b) that participation in an EWG under document C/S P.011 is expected to include experts on the subject matter, after appropriate coordination with the designated Chair and as directed by the Council;

c) that because of the lateness in the change of the designation of the meeting, the fact that many people already had made preparations to participate in the TG-1/2017 proposed by JC-31, and that the meeting could benefit from wide participation, it would be appropriate to extend an invitation to all of the normal task group participants for their participation in the proposed EWG;

d) that there was general agreement to extend to all of the normal task group participants an invitation for their participation in the proposed EWG; and

e) the offer of the United States to have Mr. Jesse Reich chair the meeting.

10.3.10 The Council **DECIDED** to:

a) convene an experts working group on SGBs and SGB/FGB ELT(DT)s, under the chairmanship of Mr. Jesse Reich (USA) (see also section 10.4.6 of this Summary Record);

b) to approve the terms of reference for the experts working group meeting as proposed in document CSC-59/OPN/10/10, as shown at Annex 20 to this Summary Record; and

c) to extend to all of the normal task group participants an invitation for their participation in the EWG.

TASK GROUP ON MEOSAR EVOLUTION

10.3.11 The Council **DECIDED** to:

a) convene a task group on MEOSAR system evolution (see also section 10.4.6 of this Summary Record);

b) accept the terms of reference based on the agreed edits discussed during the CSC-59 Closed Meeting and as presented as updated Attachment 2 from document CSC-59/OPN/10/7-Corr.1, as shown at Annex 21 to this Summary Record; and

c) work intersessionally to identify a chair for the meeting.

10.4 Programme Meetings Schedule and Calendar

10.4.1 The Council **NOTED** from document CSC-59/OPN/10/6 (USA) a proposed 2018/2019 meeting schedule based, in part, on modifications to the recommendations from JC-31, and that:

a) a Council meeting should be scheduled between the February 2018 and February 2019 dates in order to approve ongoing work on SGB documents; and

b) in order to complete preparations for entering into MEOSAR FOC in 2020 the Council should decide to return to a more traditional meeting schedule for the remainder of 2019.

10.4.2 The Council **NOTED** from document CSC-59/OPN/10/9 (France) in response to document CSC-59/OPN/10/6:

a) that having a Council meeting in May 2018 was not a sufficient condition for SGB ELT(DT)s to meet the ICAO timeline;

b) that consideration should be given to the necessary conditions to be met before planning an additional Council meeting;

c) a proposal to shorten the duration of the Joint Committee meeting by one day beginning as of 2018; and

d) the appropriateness of the 2019 schedule in document CSC-59/OPN/10/6 (the more traditional schedule) required further consideration and justification in view of Programme evolution timelines, and that it would be appropriate to also consider task group and experts working group meetings that might be required in 2019 before deciding on a 2019 schedule.

10.4.3 The Council **NOTED** from document CSC-59/OPN/10/1-Rev.1 (Secretariat) a draft schedule of Cospas-Sarsat meetings for 2018 and early 2019, and that the:

a) schedule had replaced the previously-proposed TG-1/2018 meeting with an EWG-1/2018 meeting, consistent with the decision of the Council at section 10.3.10 of this Summary Record, and that the other technical meetings had been renamed accordingly;

b) United Arab Emirates had withdrawn its invitation to host JC-32 due to unforeseen operational requirements; and

c) schedule had been reviewed and endorsed by the CSC-59 Closed Meeting.

10.4.4 The Council **NOTED** from discussion of documents CSC-59/OPN/10/6, CSC-59/OPN/10/9 and CSC-59/OPN/10/1-Rev.1 general agreement to the schedule of meetings for 2018 and early 2019 proposed in document CSC-59/OPN/10/1-Rev.1.

10.4.5 The Council further **NOTED** from discussion of documents CSC-59/OPN/10/6 and CSC-59/OPN/10/9 regarding the 2019 meeting schedule various views that:

a) the lack of technical meetings in the schedule shown in document CSC-59/OPN/10/6 was not to suggest that there would not be such meetings during that year, but merely that it was too early to propose such meetings;

b) without a sense of what technical meetings would be required in 2019, it would be hard to make a well-informed decision about the schedule for the Joint Committee and Council meetings;

c) pending a decision about what technical meetings might be required in 2019, the objective of returning to the traditional schedule was a good one;

d) the timeline of the Programme evolution might require postponing beyond 2019 a return to the more traditional Programme meeting schedule;

e) the time in the proposed 2019 schedule between the January/February Council meeting and a June Joint Committee meeting would not allow much time to progress any work that the Council might decide was necessary;

f) the proposed schedule should not be viewed as a final decision, but as a planning target subject to revision; and

g) there was no support for reducing the length of the Joint Committee meetings at this time.

10.4.6 The Council **DECIDED** to:

a) approve the schedule of Cospas-Sarsat meetings for 2018 and early 2019 in document CSC-59/OPN/10/1-Rev.1, as shown at Annex 19 to this Summary Record; and

b) endorse as a planning target the 2019 meeting schedule in document CSC-59/OPN/10/6, subject to further consideration in light of the Programme's evolution timelines and decisions about convening technical meetings in 2019.

10.4.7 The Council **NOTED** from document CSC-59/OPN/Inf.10 (Qatar) an invitation to host a Cospas-Sarsat meeting in the near future.

10.4.8 The Council **NOTED** from discussion of document CSC-59/OPN/Inf.10 (Qatar):

a) that the invitation was welcomed and that the Council would look forward to finding a suitable occasion for which to accept the invitation; and

b) that it would not be possible to accept an invitation for any meeting in 2018.

11: OTHER BUSINESS

REPORT OF TG-2/2017

11.1 The Council **NOTED** from document CSC-59/OPN/11/1 (USA) the Report of the Task Group on Second-Generation Beacon (SGB) and SGB/FGB ELT(DT)s, Development of Operational Documents, Development of C/S A.003 (System Monitoring and Reporting), and QMS (TG-2/2017), and that:

a) the summary of the activities and results of TG-2/2017 reported in this document, and as fully documented in the TG-2/2017 Final Report; and

b) note that the action items listed were submitted to the Joint Committee (JC-31) in October 2017 for consideration, review, and action as appropriate.

COSPAS-SARSAT SYSTEM DATA DOCUMENT ISSUE

11.2 The Council **NOTED** from document CSC-59/OPN/Inf.4 (Secretariat) the new Cospas-Sarsat System Data No.43 and that the document was intended to be completed with amendments provided by Participants during the CSC-59 Session and posted in the three languages of the Programme on the Cospas-Sarsat website in February 2018.

COSPAS-SARSAT GLOSSARY

11.3 The Council **NOTED** information provided in document CSC-59/OPN/Inf.7 (Secretariat) for use by interested participants in view of completing action item JC-31/AI.55 in updating and adding to definitions in document C/S G.004, "Cospas-Sarsat Glossary".

COSPAS-SARSAT OUTREACH AND PROGRAMME VIDEOS

11.4 The Council **NOTED** from document CSC-59/OPN/11/2 (Secretariat) updated information on the development of the outreach/education videos to publicize the Programme and educate users of the System, particularly the MEOSAR system, and that:

a) the series of training videos and the video short designed to publicize the new MEOSAR system had been completed as planned;

b) new System graphics had also been developed, and along with the videos were available on the website; and

c) the videos and graphics had been well received, were endorsed by the ICAO/IMO JWG on SAR, and had generated increased viewing statistics on the Cospas-Sarsat website, Facebook page, and YouTube.

11.5 The Council further **NOTED** from document CSC-59/OPN/11/2 and its presentation that the Secretariat:

a) intended to revive the production of the Cospas-Sarsat Information Bulletin, and, to that end, would prepare a paper for the next Council meeting to describe the resources that might be required; and

b) looked forward to receiving photos, articles and "saves" stories from Participants.

11.6 The Council further **NOTED** from document CSC-59/OPN/11/2 that the Joint Committee, in particular the OWG, had reviewed the training and MEOSAR videos and had recommended that the Council continue to fund the video production effort in 2018 to include production of:

- new meeting banners using the new System graphics and MEOSAR satellites, for display at the CSC-59 Council Session,
- a video-mini series, the list of topics for which had been under discussion and review for the past year, to include two additional topics addressing the functionality of FGBs with the MEOSAR system, and the alert cancellation function.

11.7 The Council further **NOTED** from document CSC-59/OPN/11/2 the recommendations that it:

a) consider the recommendation of the Joint Committee (JC-31) that the Programme produce a series of video minis, as supported by the ICAO/IMO JWG on SAR, and new Programme meeting banners in 2018 and the quote obtained to accomplish this work; and

b) authorize in the 2018 spending plan:

- CAD 2,800 for the design and production of two meeting banners,
- CAD 45,000 for the production costs of 32 video-minis in the English language, and finalize subtitling of the video shorts in the French and Russian languages in 2018, with a view toward production of the video-minis in the French and Russian languages in 2019.

11.8 The Council **NOTED** from discussion of document CSC-59/OPN/11/2 that:

a) the Council noted with gratitude the:

- ongoing work on the videos, which provided an excellent outreach mechanism,
- efforts of Argentina to provide a Spanish-language subtitled version of the eight training videos, which the Secretariat would post on YouTube; and

b) there was full support for the production of the videos and banners as described in the document.

11.9 The Council **DECIDED** to include in the 2018 spending plan CAD 50,000 for the production of a series of video minis and two meeting banners.

12: APPROVAL OF SUMMARY RECORD

12.1 The Council **DECIDED** to approve the Summary Record of the Open Meeting of its Fifty-Ninth Council Session on 8 February 2018.

12.2 The Council **NOTED** the cordial invitation of the Chair to all participants to celebrate on 1 July 2018 the thirtieth anniversary of the signature of the International Cospas-Sarsat Programme Agreement (ICSPA) in Paris, whose preamble 'recognises' that "it is therefore desirable to operate the Cospas-Sarsat System […] so as to endeavour to provide long term alert and location services in support of search and rescue, and provide access to the System to all States, on a non-discriminatory basis and free of charge for the end-user in distress", as all the Programme accomplishments called for celebration, for reflection and also for continuous effort as regards the future.

12.3 The Chair thanked all participants for their contributions, and the Secretariat for their support at the meeting. The Chair also thanked the interpreters for their support during the meeting. The meeting participants thanked the Chair, Mr. Andrey Kuropyatnikov, for his effective conduct of the meeting.

附件 4、與會照片

59th Session of the Cospas-Sarsat Open Council Meeting
5 to 8 February 2018, ICAO, Montreal, Canada