出席太平洋區通信者國際交換服務次委員會
一年第一次會議報告書

壹．　前言

太平洋通信者國際交換服務次委員會(Pacific Partners Meeting International Switch Service Sub-Committee,簡稱 PPM ISS) 由太平洋區十一個主要電信機構/公司的國際電信營運單位組成，已於 2000 年台北舉行之會議中，決議改為太平洋通信者國際呼叫服務次委員會(Pacific Partners Meeting International Call Service Sub-Committee,簡稱 PPM ICS)。

PPM ICS 會議自 1989 年 10 月第一次舉辦以來,每年開會三次(自 1998 年開始改為每年二次),本公司依預算編列情形核派人員參加。本次會議為 2001 年第一次會議,由澳大利亞 Telstra 電信公司籌辦,在雪梨(Sydney)召開,案奉中華電信公司九十年七月十三日信人三字第 90A3001596 號函,核派國際電信分公司助理工程師林宜誠乙員前往參加。

會議之主要目的在研討語音業務之相關技術及網路品質改善工作，擬定具體之行動方案，貫徹執行，並透過會員間雙邊會談，簽署服務等級協議及服務改善計畫，於每次會議中追蹤執行進度及成果，以提升客戶滿意度。

貳．　摘要：

此次會議集中在以下之五大重點項目：

一.各會員之 PSTN 及 ISDN 呼叫完成率及語音品質改善結果。

二.加強會員間之服務改善工作，透過雙邊會談簽署服務等級協議及服務改進計畫，以增進客戶服務滿意度及改進網路品質。

三.建立 PPM 首頁（Homepage），會員需隨時更新網站上之資訊，增進彼此間訊息之交流及合作。

四.討論參加 ICS 與 IADS 聯合會議之議題及內容。

五.會員間分享採用 VOIP 設備之經驗及效能量測技術，並研討服務品質之量測參數及改善計畫。

本次會議例行工作部分是檢討各會員間電信公眾網路(PSTN)及 ISDN 網路之呼叫品質，藉由各會員間所提供之資訊，如交換機接續完成率、來話完成率、去話完成率、各國編碼計畫、交換機資料庫之被叫號碼編碼解譯資料以及達成率偏低之被叫號碼確認等，瞭解盟員間之服務品質，並與成員對歐洲主要國家之服務品質數據對比，透過彼此間經驗交流，找出網路之潛在問題，並加以排除。新增議題則為 PPM-ICS 網站之資料維護及聯合會之議題，並且花非常多之時間於 VOIP 相關議題。

參．　會議時間、地點及出席單位

一．時間:中華民國九十年年八月七日至八月九日

二．地點: 澳洲雪梨

三．出席單位及人數:

Chunghwa Telecom　1位

CAT　1位

INDOSAT　1位

Korea Telecom　2位

Philippine Long Distance Telephone Company 2位

Singapore Telecom 2位

TeleKom Malaysia　1位

Telecom New Zealand Ltd. 2位

Telstra Corporation Ltd. 3位

Concert　1位

以上共計十個電信機構16位代表參加 PPM ICS 二ＯＯ一年第一次會議。

肆． 工作計畫：

1. Call Completion Improvement

- ASR Improvement and Benchmarking

- Improve trend of average ASR for all Members to Benchmark level

- Call Failure Analysis (CER/NER)

- Identification of effect of product and technical initiatives
- Bilateral Call Completion process improvement plans
- Identification of area codes with low ASR by country basis

2. Voice Services Quality Improvement

- Parameters to be exchanged within PPM and Benchmarking

- Non-intrusive voice quality measurements, establish voice quality benchmarking

- Improvement Initiatives

- Identification of effect of product and technical initiatives
- Bilateral voice quality improvement plans

3. Fax Services Quality Improvement

- Fax work programme complete

- Watching Brief on new technology, bilateral initiatives as required from analysis

4. ISDN Services Quality Improvement

- Parameters to be exchanged within PPM and Benchmarking

- Call completion, trouble management, service availability, transmission quality
- ISDN quality benchmarking

  - **Improvement Initiatives**

- Identification of effect of product and technical initiatives
- Bilateral ISDN quality improvement plans

  - **Troubleshooting, escalation and information exchange**

- All aspects relating to real-time O&M driven by Operations Forum, closer working relationship with vendors and customers

5. Updating and Improving Quality Improvement Handbook

- Establish PPM Homepage, on-line updating and distribution

6. Expansion and status of 3-level SLAs

- Break-out meetings at PPM for bilateral discussions and production of action plans
- Extend SLAs to include service as well as network measures and provide template for reporting to ISS Meeting on progress against action plans

7. Convergent Business

- Study and recommend further direction of ICS

8. Study on VoIP Services Quality Improvement

  - **Parameters to be exchanged within PPM and Benchmarking**

- Call Completion, ASR trending and Benchmarking against traditional PSTN service.
- Non-intrusive voice quality measurements, establish voice quality benchmarking

against traditional PSTN voice quality measurements.

- **Improvement Initiatives**

- Identification of effect of product and technical initiatives.
- Bilateral Call Completion process improvement plans.
- Bilateral voice quality improvement plans.

9. Meeting Schedule and Host Carrier

2001	August	Telstra Sydney
	September	SingTel (Joint ICS / IADS)
2002	May	TM
	October	CAT (Joint ICS / IADS)

伍． 行動方案

PPM ICS 前次會議於 2000 年十一月在台灣台北召開，會中擬訂二十一項 ICS 品質改善行動方案(AP) 及 1999 年日本東京會議五項等尚未完成之行動方案。本次會議中各會員陸續報告其相關 AP 之執行情形，並由大會判定是否"close"，會議結束時經更新後尚未"close"之行動方案依附在會議紀錄中。

PPM ISS MEETING'S ACTION LIST

Action Item No.	Meeting Developed	Date	Brief Description
AP3	Tokyo	04/00	Carriers using TCQM should already source for alternative in-call quality monitoring equipment to program as possible replacement
AP4	Tokyo	04/00	All carriers to complete the matrix under Paper D-15 by April 20, 2000
AP8	Tokyo	04/00	KDD to provide a brief description on the equipment used in Paper C-11 and some explanations on the results.
AP9	Tokyo	04/00	To review and provide feedback by next meeting the B-numbers in Paper C-17 which summarizes the destinations that encountered resource unavailable or customer's reasons.
AP14	Tokyo	04/00	All carriers to review Paper D-12 and provide a report by next meeting if their definition of the in-call quality parameters is different from what were defined in the provided paper.
AP1	Taipei	11/00	Present a 6-month trend of cable VS. satellite circuits to other Members
AP2	Taipei	11/00	Present a comparative summary on the method or principle used by Net-C, TCQM, and NetMon
AP3	Taipei	11/00	Send letter to KDD compiling the replies to AP9 of Tokyo Meeting and inquiring if KDD would require further actions from ISS
AP4	Taipei	11/00	Review the B-numbers as provided by Concert. (Paper C-19)
AP5	Taipei	11/00	Present the rationale behind the values use for delay threshold as presented in CHT Paper B-11
AP6	Taipei	11/00	Get a copy of the paper on how ASR objectives are set.
AP7	Taipei	11/00	Provide conditions in implementing expanded digit analysis

AP8	Taipei	11/00	Send letter to KDD and TNZ on the relevance of their participation to PPM ISS
AP9	Taipei	11/00	Provide comment on request of TM to balance traffic based on number of circuits.
AP10	Taipei	11/00	Generate common definitions for far end and near end echo for comments and agreement befroe next meeting.
AP11	Taipei	11/00	Provide comments on the SingTel proposed quality measurement standards (Paper C-24)
AP12	Taipei	11/00	Present the rationale behind the values use fo delay threshold used in Ctel
AP13	Taipei	11/00	Produce a copy of the previous PPM paper regarding the required minimum call volume to make the data valid.
AP14	Taipei	11/00	Develop a tracking mechanism to monitor developments on SII and SLA.
AP15	Taipei	11/00	Confirm agreement on the development of ISS Homepage
AP16	Taipei	11/00	Send e-mail to all members summarizing the production requirements of the Homepage.
AP17	Taipei	11/00	Indosat to transfer 15 circuits each to Medam and Batam from Jakarta to reduce congestion
AP18	Taipei	11/00	Indosat to provide a paper on variable bit rate target setting for ECT DTX DCME Family.
AP19	Taipei	11/00	During the first meeting in 2001, Concert to arrange presentations from both CISCO and Clarent pertaining to VoIP basics and new developments.
AP20	Taipei	11/00	Carriers are requested to provide their experiences as regards managing service performances for VoIP by next meeting.
AP21	Taipei	11/00	Carriers to report current VoIP connections among PPM carriers providing information on facilities used including technology adopted.

陸．　感想及建議

電信自由化的浪潮席捲全球，各國電信市場增加了很多新競爭者，電信技術一日千里，語音傳送、接續技術推陳出新，加上網際網路興起，帶動 VOIP (Voice over Internet Protocol)技術崛起，皆造成國際電話市場之重大衝擊。電信市場未開放前，各國僅有少數幾家甚至是獨家電信業者經營國際電話服務，業者僅是單純地將某一國家之國際話務送至另一個國家之電信業者，各國際電信業者彼此間為合作關係，但市場開放後，除了原有之一般固網業者（Carrier）投入市場外，更有 ISR（國際話務轉售服務）業者的興起，群雄並起，競爭劇烈造成價格之破壞，且各業者皆依照品質與價格兩項因素，將語音服務包裝成各種產品組合，如通話費率可依照不同計費方式（以分或以秒為計費單位）及使用不同接續技術（如傳統交換機或 VOIP）來變化，付費方式為國際電話預付卡、信用卡及受話方付費等，種類繁多，客戶可依照本身需求是著重品質、價格或方便性為依歸，選取最適合本身之產品。整個電信環境已經不同於往昔，就國際話務之接續及批售而言，國際電信業者現在的處境，宛如話務（Traffic）之進出口商，在全世界的電信市場中交易套利，精算每筆交易成本，盡力獲取最大利益，方能在市場中生存。

有鑑於市場之變化，為增強競爭力，PPM-ICS 會員之澳洲 Telstra 將國際電話部門分割出來，與香港電訊盈科（PCCW）國際電話部門合併，成立 Reach 公司，以因應競爭環境之改變，Reach 電信公司更對語音業務之路由安排做重大變更。

Reach 成立交易工作室（Trading Operations Room），集中管理公司所有國際語音業務之路由，包含傳統之交換機及 VOIP 設備，決策機制以商業為考量，如隨時觀察是否有多餘電路及目前之路由是否為最經濟之組合，取代以往完全以話務品質為依歸之路由安排模式。工作人員主要的角色是將不同服務等級之話務，擺在正確之路由，並依照網路最新狀況作調整，交易工作室之人員可隨時更改路由，並觀察中繼電路效用，再由網管人員監測及控制電路品質，未來交易工作室及網管人員合併是必然之趨勢。

國際電信業者間常互相承諾於一定期限（六個月或一年）會送一定額度之話務分鐘數至對方，若未達到此額度時，為避免本身權益受損，他們會向其他業者或 ISR 業者以低價購買話務，補足額度，避免實際話務與承諾數量之差額損失，而販售話務者因可以低價接通話務而受惠。而去話話務分鐘數較多之業者，則可能會將超過約定額度之話務，經過替代之低價之路由，如 VOIP（Voice over Internet Protocol）路由或其他 ISR 業者，來規避一般業者(Carrer)間較高之攤分費率。

如此一來，網路將非常複雜且難以管理，而且服務品質降低時，網管人員不再單純地使用最佳品質路由去接續這些呼叫，而是依照商業策略，考慮各類呼叫服務等級以選取相符的路由，例如網路擁塞時，低費率之呼叫可能會被移除，而不是如以往一般，積極找替代路由疏導，而低費率呼叫等級之用戶若因而申告，業者會鼓勵客戶選用較高品質（費率也較高）之呼叫等級，客戶所享服務完全依照客戶所選擇呼叫費率相對應之服務等級而定。簡言之，當利潤因競爭遭大幅壓縮，各電信業者莫不殫思竭慮，設法將設備使用率提至最高，讓不同服務等級之話務得到最佳接續，並把不同產品做適度之市場區隔，找到其利基點，以獲取最大利益。

另外，零售市場之國際電話預付卡所佔地位愈趨重要，Telstra 告知澳洲雪梨此類產品非常盛行，主要販售管道為超市及網路咖啡廳，為了解實際狀況，會走訪多家上述業者，當地預付卡種類之繁多，令人驚訝，撥接方式皆為兩段式撥碼，先撥至系統主機，會出現語音提示，要求使用者選擇所熟悉之語言，如英文或中文，再以語音提示客戶輸入用戶碼（login） 及密碼（password）。預付卡通常依據下列因素作計費區隔：受話國、系統接取碼（Access Number）及被叫號碼等。根據各項因素簡單敘述如下：首先，受話國：各預付卡公司，會根據本身之合作對象或市場特性主動做市場區隔，例如，某業者發

行之卡片主要是針對泰國、香港、新加坡三個受話國，則撥打這些國家之費率，會非常便宜，當然用此預付卡，也可撥叫其他國家，但費率會比較貴。其次，系統接取碼：消費者可撥叫市內電話或長途免付費電話至系統主機，例如，本人所買之預付卡，在雪梨、墨爾本有市內接取碼，在上述地方可撥市內電話至系統主機，以公用電話撥市內電話每通為四十仙澳幣，不限通話時間，使用者需負擔市內電話費用及國際預付卡通話費，若於其他地區，消費者可撥接長途電話至最近之上述系統接取碼，或利用業者所提供之免付費電話撥接至系統，兩者所收取之費用不同，即業者會將免付費電話之成本轉嫁至消費者，何者方式有利，端視消費者選擇。最後一項為被叫號碼，若受話號碼為行動電話則費率較高，若為市內電話則費率較低。消費者可考量這幾種因素，選購不同公司所發行之各式卡片，中華電信國際直達電話至澳洲每六秒一點三元，換算每分鐘為十三元，本人由澳洲以當地之國際電話預付卡打回至台灣，該卡採用 VOIP 技術，撥打市內接取碼且受話號碼為市內電話號碼，費率為一分鐘三元新台幣，測試結果，通話品質良好。相信台灣未來國際電話預付卡之市場，將如澳洲一樣，急速成長，呈現百家爭鳴之景象，勢必會侵蝕國際直撥話務，國際分公司應及早因應，並鞏固預付卡市場。

綜合以上所言，在此提出下列建議：

國際語音服務之統合：語音傳送技術不斷演進，除了傳統之電路交換技術，也就是傳統交換機，如國際分公司所採用 Lucent 之 5ESS 及 Alcatel S12 外，更有各式新技術，如 Voice over ATM， Voice over Frame Relay 及 VOIP 等，但對客戶而言，皆為語音服務。國外業者基於管理方便、統一查修窗口提高服務品質及市場考量，皆將語音業務作整體規劃，針對市場需求，包裝成不同產品，以爭取客戶，而且集中管理路由、話務品質，甚至設備維護。反觀中華電信之 IDD(002)、Super E-call（012)、E-Call(兩段式撥碼) 、國際電話預付卡及等各種國際電話服務，應該做明確之市場定位，區隔市場，以利業務之推廣，例如，Super E-call 之費率低於傳統 IDD 路由，除了兩者品質差異非常小以外，用戶申告障礙，更享有相同服務，而 E-Call 及國際電話預付卡也有相同之市場定位不明的情況。此外，語音之路由、設備管理等，也該予以集中，不應以傳統交換機或 VOIP 做區隔，以便統一運用資源、降低成本並提昇品質。

動態路由更動：如何兼顧服務品質及提高設備使用率，並讓不同需求之用戶得到滿意之服務，求取最大獲利，是動態路由調整之意義，國際分公司應及早研議。

加強網管設備及能力：國際話務轉售盛行，呼叫（Call）因費率考量到處流竄，對網路管理是一大難題，對用戶之障礙查修也是一大

考驗，為了網路穩定及客戶滿意度，提昇網管技術及監控設備，是未來競爭之基石。

VOIP **品質管制：因** VOIP **愈來愈盛行，加強品管能力，提高語音品質，已是各國會員努力的目標，各業者需訂定統一之服務品質標準及量測方式，讓來去話雙方能有共同標準可以遵守，**PPM-ICS **已將此列為重要議題，中華電信應加強與國際業者技術交流，以提升國際電話呼叫品質與滿足客戶需求。**

柒.會議紀錄

MINUTES OF MEETING (DAY 1)

1.1	**Opening** Mr. Raymond Relucio, PPM-ICS Chairman, welcomed all delegates to the meeting and introduced Mr. Graham Bone, of host Reach, to formally open the meeting.	**Noted**
1.2	Mr. Graham Bone acknowledged the presence of the participants and expressed his appreciation for the efforts exerted by all carriers for this meeting to materialize. He briefly explained the goals and objectives of the ICS working group carrier members, and its relevance to the overall expectations of the PPM Principals. He further encouraged all carriers to focus on service improvements and customer satisfaction.	**Noted**
1.3	Mr. John McDermott of Reach, informed the group of the working and social arrangements for the duration of the meeting. Ref. Paper A07	**Noted**
1.4	Mr. Relucio asked all participants to briefly introduce themselves considering the many changes in personalities who regularly attend the PPM-ICS meetings. All carrier representatives complied and provided a brief description of their individual roles and their experience and expectations with the PPM ICS Meetings.	**Complied**
1.5	Mr. Milan Topacio of PLDT was appointed as Minutes Secretary for this meeting.	**Noted**
1.6	The Chairman presented the Draft Agenda for the meeting and the Paper-to-Agenda assignment. Papers which were not included in the original assignments, were agreed to be numbered and presented in accordance with the topics listed in the agenda. All representatives agreed to adopt the draft Agenda. Mr. Relucio likewise stressed the importance of the bilateral Service Level Agreements and Service Improvement Initiatives as output of the regular ICS meetings. It was noted that Day 2 shall allocate time for discussing bilateral agreements between member carriers to be presented later on in the meeting. Ref. Paper A04	**Noted**
1.7	Mr. Bone presented a summary of the discussions and actions agreed during the PPM Principal' s Meeting and a presentation of the outputs of the Quality Committee. Ref. Paper A08	**Noted**
1.8	Mr. McDermott presented the participants with a short description of the formation of Reach as a joint venture between PCCW and Telstra. Ref. Paper F03, formal paper to be presented under Other Matters.	**Noted**

1.9	The Chairman presented the Work Programme for 2001, concentrating on PSTN and ISDN call completion and voice quality, bilateral activities between member carriers, the establishment of the PPM Homepage, and the necessary activities to support the collective effort covering the emerging VoIP technology. Ref. Paper A09	**Noted**
1.10	The Chairman reviewed the summary of PPM ICS Action Points and requested member carriers for the latest updates. All members responded with the status and advised of presentations for this meeting regarding action points for each carrier. Paper A05 shall be revised to reflect current action point summary as attachment to the minutes of this meeting. Ref. Paper A05	**Noted**
2	**Review of Action Points from Previous Meetings**	
2.1	CAT presented Paper B01 on details of their current Cable vs. Satellite circuits relative to AP1 of the Taipei Meeting, citing they have practically expected no changes on the number of satellite facilities considering CAT' s existing long term contract with IntelSat on satellite capacity. Ref. Paper B01	**Noted**
2.2	CAT presented their reactions to Singtel' s Proposal on Quality Measurement Standards (AP11, Taipei) explaining their recommendation to also measure near end echo path delay and near end echo path loss, respectively. Ref. Paper B02	**Noted**
2.3	CAT provided results of their analysis on the B-number list as contained in the paper herein. Ref. Paper B03	**Noted**
2.4	CHTI presented a paper regarding their findings on the B-number information provided by Concert (AP4 Taipei). It was stressed that the mobile numbers in the list were either most of the time switched off or with temporary account suspension. Ref. Paper B04.	**Noted**
2.5	CHTI presented paper B05 detailing actual programmed digit screening lengths for their gateways to the PPM carriers relative to AP7 of the Taipei Meeting. Ref. Paper B05	**Noted**
2.6	CHTI likewise presented the paper describing their present Cable and Satellite facilities in response to AP1 of the Taipei Meeting. It was noted that there were no recent reductions in the number of satellite circuits for PPM due to current activities concentrating on migrating circuits to cable of CHTI to European carriers. Ref. Paper B06	**Noted**
2.7	In relation to the 6 month trending of cable vs. satellite facilities, Singtel requested for clarification on whether these should be based on the actual number of circuits or on traffic carried. It was later clarified through group discussion that based on the objective for which the action point was raised, the	**AP1, All**

	practical method of tracking cable and satellite facility usage was through the use of actual number of circuits instead of traffic carried. As an option, TNZ' s recommendation to show the number of satellite circuits turned down was encouraged in future reports.	
2.8	KT presented their paper for AP1 of the Taipei Meeting, showing the ratio of satellite and cable circuits in their international network. KT no longer has any satellite circuits with Reach, CAT, PLDT and IndoSat. Ref. Paper B07	**Noted**
2.9	KT also presented their analysis of the B-numbers in AP4 of the Taipei Meeting explaining that most of the numbers were either unallocated fax numbers which were turned off during evenings. Most of the calls were for mobile phone numbers and some to US Army private numbers. Ref. Paper B08	**Noted**
2.10	Concert aired their comment that the B-numbers were provided specifically to aid in the analysis of areas of concern and to serve as a tool to identify if there is an abnormality in the network. The Chairman agreed that the B-numbers are very useful to identify certain conditions which may have been overlooked by each carrier' s own initiative in ASR improvement, and requested all carriers to continue to support the continuing efforts in the provision of failing B-numbers and reciprocate by reporting analysis and findings.	**AP2, All**
2.11	KT presented their traffic analysis as reaction to AP11 of the Taipei Meeting. It was noted that there were no special events which could explain the lower ASRs for the months January to April, 2000 but ASR after this period was very stable. Concert noted that ASR for Daejon for the same period was not affected and suggested further analysis if the decrease in ASR was regionalized. Ref. Paper B09	**Noted**
2.12	PLDT presented Paper B10 showing the 6-month trend of Cable vs. Satellite circuits in its international network (AP1, Taipei). Figures showed percentage values for total circuits since no satellite circuits are already existent with its PPM partners. Ref. Paper B10	**Noted**
2.13	PLDT likewise presented feedback to the B-numbers provided relative to AP4 of the Taipei Meeting showing analysis of the call failures and relating these to the B-numbers. Corresponding actions taken to address the failures are also indicated. Ref. Paper B11	**Noted**
2.14	PLDT replied to AP7 of the Taipei Meeting by presenting its policy on digit screening. Between 2 to 4 digits after country code are screened at its international gateways for PPM partners but exception goes to Concert where up to six digits are screened for NPAs which have carrier specific number series. In addition, number length screening is also implemented.	**Noted**

	Ref. Paper B12	
2.15	PLDT presented its comments to AP11 of the Taipei Meeting citing its agreement to most of the parameters proposed by Singtel and its additional proposals for Quality Measurements, namely: Reporting of Echo Path Loss and Echo Path Delay violations Set a fixed maximum value for echo consideration Reporting in terms of percentage Formulation of Grade of Service Performance Index in accordance with ITU-T Recommendations Ref. Paper B13	**Noted**
2.16	TM presented its own reaction to AP11 of the Taipei Meeting for In-Call Quality Measurements suggesting measurement of both echo path delay and echo path loss considering that echo is a result of a combination of these two parameters. Ref. Paper C35	**Noted**
2.17	The Chairman requested that Singtel consolidate all reactions and counter proposals relative to AP11 of the Taipei meeting to come up with a consolidated summary of the Quality Measurement parameters and format to be adopted by all carriers.	**AP3, Singtel**
2.18	PLDT presented Paper B14 for the proposal for tracking mechanism for monitoring progress of SIIs and SLAs. The group agreed to put in clarificatory notes on why targets are not met. It was also agreed to adopt the format presented and provide quarterly updates to PLDT for collation on the Chairman's behalf. It was proposed that the Homepage be considered means to contain SLA and SII updates. PLDT to consider such in the design of the Homepage. Ref. Paper B14	**AP4, All** **AP5, PLDT**
2.19	SingTel presented its findings on the analysis of B-numbers as stipulated in AP4 of the Taipei Meeting. Some of the numbers provided were verified to be not in use and the analysis also showed a discrepancy in the measured values of Concert and Singtel. Discussions indicated a difference in the reference point of measurements and failures encountered prior to reaching Singtel's network, which may account for the discrepancies. Concert requested Singtel to provide details of the findings and requested for the latest information from Singtel regarding current data on numbers, which were found to be no longer in use. Ref. Paper B15	**AP6, Concert & Singtel**
2.20	Singtel also presented Paper B16 on their implementation of digit screening for PPM member carriers (AP7, Taipei) which is 2-3 digits after country code. Singtel also cited that their implementation also depends on switch resource availability. Ref. Paper B16	**Noted**
2.21	Singtel likewise replied to AP1 of the Taipei meeting and showed its data on existing cable and satellite circuits for PPM carriers using percentage utilization	**Noted**

	based on conversation minutes. Ref. Paper B17	
2.22	Reach presented its summary of cable and satellite circuits in response to AP1 of the Taipei Meeting. Reach advised that their connections to most of the South Pacific Islands can only be facilitated via satellite connections. Ref. Paper B18	**Noted**
2.23	TM presented Paper B19 on its cable and satellite circuit distribution in its international network as reaction to AP1 of the Taipei Meeting. TM has plans of migrating its remaining satellite circuits with KT and Concert in the near future. . Ref. Paper B19	**Noted**
2.24	TM presented a proposal relative to AP7 of the Taipei Meeting, to include in future numbering plan updates any carrier specific number series which require special routing. It was noted that carrier specific codes need deeper screening to be able to perform specific routing requirements. Ref. Paper B20	**Agreed**
2.25	Relative to AP1 of the Taipei Meeting, Indosat presented its cable and satellite circuit distribution within the PPM network. Efforts will be exerted to convert all their satellite circuits with TNZ to cable. Ref. Paper B23	**Noted**
2.26	The Chairman presented a document describing the letter sent to KDDI on comments to Paper B17 of the Tokyo Meeting and response to AP9 of the Tokyo Meeting (AP3, Taipei). The letter also confirmed the provision of the complete Taipei Meeting Paper Binders to KDDI in response to its request to be kept abreast of developments in PPM during their inability to attend the meetings. Ref. Paper B21	**Noted**
2.27	The Chairman/PLDT also presented its response to AP8 of the Taipei Meeting to send a letter to KDDI and TNZ on the importance of their continued support and presence in future PPM ICS Meetings. Favorable response was shown by TNZ as they are very well represented in this meeting. However, KDD expressed its regret that it will not be able to attend until the 2002 meetings. Ref. Paper B22	**Noted**
3	**Summary of Quality Improvement Record**	
3.1	The Chairman/PLDT presented the summary of Quality Improvement Record of all member carriers from 1994 to 2000. A summary of the incoming ASRs are reflected for each category of PSTN ASR and CER, and ISDN ASR and CER for both PPM and European basket of carriers as shown in the individual carrier' s performance charts. The highlights of the 4Q00 performance were also presented. Ref. Papers A10, A11, A12, A13 and A15	**Noted**

3.2	The Chairman requested all members to validate the assessments made in Paper A15 and provide their comments by next meeting.	**AP7, All**
4	**Review and Update to Handbook Format and Contents**	
4.1	CAT presented its update to the handbook on network and equipment interfaces, postponed turndown date of its ITSC1 gateway, and the continued operation of its ITSC IV-A switch from 2Q00 to 3Q01. CAT also presented relevant changes to Thailand' s Domestic Numbering Plan. Ref. Paper C03	**Noted**
4.2	CHTI presented its updates to Taiwan' s National Numbering plan with its 1 and 2 digit analysis tables, and details for mobile and paging service codes. Ref. Paper C05	**Noted**
4.3	KT presented its new numbering plan for Korea and KT' s update to its organizational structure and contact points to the handbook. The paper also includes a list of National Public Holidays in Korea. Ref. Paper C12	**Noted**
4.4	PLDT presented its Handbook Information Update containing the 3 digit active code table and National Public Holidays for the Philippines. Ref. Paper C17	**Noted**
4.5	PLDT also presented a document regarding the postponed change in numbering plan and digit length for area code 2 in the Philippines from June 2001 to March 2002, as directed by the National Telecommunications Commission of the Philippines. Ref. Paper C18	**Noted**
4.6	Singtel presented as handbook updates its valid national PSTN, paging and mobile number plans as of July, 2001. Ref. Paper C20	**Noted**
4.7	Singtel likewise presented a paper showing its planned conversion of 7 to 8 digits in the local subscriber PSTN dialing plan which will take effect on March 2002. A one year permissive dialing period is to be implemented in relation to this new numbering plan. Ref. Paper C21	**Noted**
4.8	Reach presented the revised Australian numbering plan which involves a major change in the elimination of ' 0' as a valid area code. The paper also includes a comprehensive list of the remaining valid area codes and the corresponding number range usage for reference in commercial traffic routing evaluation. Reach likewise presented a related paper on Day 2 for failed calls resulting from invalid digit length received for certain area codes in Australia. Ref. Paper C25, C46	**Noted**
4.9	Indosat presented its numbering plan with indicators for priority gateway routing for reference by other carriers in routing traffic to Indosat. Specifications for	**Noted**

	mobile number series, paging and special routing codes were included. Ref. Paper C40	
4.10	Indosat likewise presented National Public Holidays in Indonesia. Ref. Paper C41	**Noted**
4.11	Indosat presented an updated contact and escalation list levels for each location and center of its various international stations. Ref. Paper C42	**Noted**
4.12	TM presented its handbook information update for Malaysia' s telephone numbering plan for 2001, telephone number assignment, national numbers for Malaysia and TM' s numbering plan update. These include digit length excluding country code. Ref. Papers C34, C36, C37,C38 and C39	**Noted**

(End of Day 1)

PPM-ISS Sub-Committee Meeting

7-9 August 2001

Sydney, Australia

MINUTES OF MEETING (DAY 2)

5	Day 2 began with the review of Day 1 Minutes.	**Noted**
6	**PSTN Call Failure Analysis**	
6.1	Concert presented the 1Q01 ASR and NER to PPM (C01), and the European basket of 6 carriers (C02). Concert noted that there was no major concern observed for discussion and advised that there was generally an increasing ASR trend for most of the carriers. Concert, however, requested to discuss bilaterally their slightly decreasing ASR measurement with Singtel. Ref. Paper C01, C02	**Noted** **AP8, Concert, Singtel**
6.2	CAT presented their call completion performance for PPM and European carriers and cited a decrease in ASR to Singtel in March and April of 2001. In response, Singtel inquired if the measurements were inclusive of both transit and terminating traffic. The group agreed to discuss further the possibility of segregating measurements for transit and terminating traffic due to the high probability that transit traffic is negatively influencing terminating traffic ASR. It was agreed that CAT shall provide clarification on how the data in Paper C03 was derived. Ref. Paper C03	**Noted** **AP9, CAT**
6.3	CHTI presented paper C06 for PSTN ASR and CER to PPM and European carriers. CHTI noted that their measurements included both transit and terminating traffic. PLDT and CAT were noted to have slightly decreasing ASR while TNZ and KDD experienced and increasing trend. Discussions also focused on separating mobile from PSTN traffic considering the general impact of the former to the latter, in ASR performance. Ref. Paper C06	**Noted**
6.4	CHTI also presented a report on call establishment ratios derived from traffic and call data records for which very small variances were observed. Ref. Paper C07	**Noted**
6.5	KT presented a paper for PSTN ASR and CER to/from PPM and European carriers, showing ASR trends and volume of attempts for both incoming and outgoing directions of traffic. Ref. Paper C10	**Noted**
6.6	Singtel presented its report on PSTN ASR to and from PPM and European Carriers. PLDT requested Singtel for separate measurements for PSTN and	**AP10,**

	CMTS specifically for the number prefixes 912, 915, 916, 917, 918 and 919. Singtel advised that they will provide the details at a later date. Ref. Paper C22	**Singtel**
6.7	Relative to Singtel' Paper C22 presentation, Concert discussed relevance of comparing the carrier' s incompletions with the trends in ASR to help understand the peaks and dips in the ASR performance. It was noted by most carriers that specific conditions of incompletion helps in the analysis and contributes positively to finding solutions to network problems.	**Noted**
6.8	TNZ inquired on the erratic ASR behavior measured by Singtel for TNZ in Paper C22. It was agreed that further discussions shall be covered in bilateral discussions.	**Agreed**
6.9	Concert proposed to provide additional reports and generic charts for traffic volume. The carriers will provide possible causes of decrease in ASR for carriers having significant changes in ASR with respect to established trends.	**AP11, All**
6.10	Reach presented its ASR Summary for Australian IDD traffic to PPM and European destinations. Similarly, Reach presented a summary of ASR to all foreign destinations qualifying measured ASR for Audiotext, Russian overlay and Inmarsat destinations. Ref. Paper C27	**Noted**
6.11	Reach presented a paper for IDD traffic observation to PLDT showing three digit analysis for ASR performance. It was noted that Reach' s traffic to PLDT is one of the largest, approximating volumes for traffic to TNZ. PLDT noted that traffic for mobile destinations, level 9, compose more than 50% of the total traffic incoming to the Philippines and requested Reach to compute ASR and call failure analysis for mobile and PSTN, separately. Ref. Paper C28	**Noted**
6.12	PLDT to evaluate Paper C28 and provide comments to Reach by next meeting.	**AP12, PLDT**
6.13	TM presented 2Q01 PSTN ASR and CER for PPM and European carriers. Ref. Paper C32, C33	**Noted**
6.14	Indosat presented its ASR for PSTN towards PPM and European carriers for the first half of 2001. It was noted that some of the European carriers reported are not included in the established basket of 6 carriers. PLDT to check the decline in ASR for May and June, 2001specifically for congestion and trunk irregularities observed. Ref. Paper C44	**AP13, PLDT**
6.15	Indosat likewise presented call failure analysis based on first digit of area code for PPM destinations. Indosat and CAT to bilaterally discuss further the observed 0 % ASR for level 6 and 9 towards Thailand. Ref. Paper C45	**Agreed**

6.16	PLDT presented its year 2000 and 1Q01 PSTN ASR and CER measurements for incoming and outgoing traffic for PPM and European carriers. Based on the data provided, Singtel inquired on the traffic types included in the measurements. PLDT replied that the statistics presented was obtained from bulk traffic data and included both terminating and transit traffic types. Ref. Paper C43	**Noted**
6.17	Reach presented a paper for traffic analysis and trends for call failures towards Reach for area codes 6 and 9 of Australia. It was noted by Reach that a significant amount of traffic was failing towards these destinations due to invalid digit lengths in received call attempts. It was agreed that carriers to implement digit length screening for further improvement in ASR towards Australia in accordance with Paper C25 earlier presented by Reach. Ref. Paper C46	**AP14, All**
6.18	The Chairman presided over discussions regarding future ASR measurements for PSTN and Mobile codes in each carrier' s network. It was agreed that all carriers who have the capability to undertake call failure analysis separately for PSTN and Mobile shall comply in future measurements.	**AP15, All**
7	**PSTN Voice Quality Improvement**	
7.1	PLDT presented its Quarterly In-Call Quality Monitoring Results showing very little percentages of echo detected for all PPM member' s traffic. No carrier was monitored to have more than 1% of the measured traffic to have any discernible echo. Ref. Paper C15	**Noted**
7.2	PLDT also presented the summary of methods of measurement and principles used by TCQM, NetMon and Net-C equipment to aid other carriers in evaluating available call quality measurement tools in the market. Ref. Paper C16	**Noted**
7.3	Singtel presented the INMD measurement results for 1Q01 and 2Q01 for PPM carriers showing details for near end and far end measurements and the thresholds used for the presentation of data. Ref. Paper C24	**Noted**
8	**PSTN Service Improvement**	
8.1	KT presented the results if its initiative to increase ASR specifically for five major countries, the United States, Japan, China, Canada and Australia. Traffic to these countries comprise 60% of KT' s outgoing call volume. Generally, all countries experienced and increase in ASR from KT resulting from their efforts to achieve the objective. Ref. Paper C13	**Noted**

9	**TNZ presented papers for agenda items which have been discussed previously for the other carriers.**	
9.1	TNZ presented current cable and satellite circuit distribution for PPM carriers. All circuits to Indosat are still via satellite. TNZ' s efforts to migrate circuits to cable can be further pursued with the availability of the Southern Cross cable system which has significantly added cable capacity to TNZ. Ref. Paper B24	**Noted**
9.2	TNZ presented its PPM Handbook updates citing no major changes in their numbering plan except for the addition of two new mobile codes. It was also mentioned that Paper C16 of PLDT will assist TNZ in its initiative to find an alternative to their out of service TCQM equipment. Ref. Paper C47	**Noted**
9.3	TNZ also presented a list of New Zealand' s National Public Holiday' s which can possibly have influence on incoming traffic behavior on cited dates. Ref. Paper C48	**Noted**
10	**ISDN Performance Analysis** Singtel led discussions for ISDN, as agreed in the Taipei Meeting.	
10.1	CHTI presented its measurements for ISDN ASR and CER for PPM and European carriers. Ref. Paper C08, C09	**Noted**
10.2	KT presented its data for PPM and European ISDN ASR and NER. KT presently has a total of 45 ISDN correspondences, including KDDI, Concert, Singtel, TNZ, CHTI and TM for PPM. Ref. Paper C11	**Noted**
10.3	PLDT presented its 1Q01 ASR and NER for PPM and European carriers. Singtel requested future reports by carriers to include measurement sample size, to relate erratic ASR behavior with observed call volumes. Ref. Paper C14	**AP16, All**
10.4	Reach presented its ASR measurements for PPM and European carriers. The diverse ASR values obtained were attributed to ISDN CPEs which were automatically programmed to redial continuously.	**Noted**
10.5	Reach presented ISDN performance observations relative to the low ASR' s observed for this service. With legal impediments on blocking originating subscribers from repeatedly calling unavailable terminating numbers, Reach is looking towards implementing NM controls for this traffic condition. TNZ expressed a similar observation in New Zealand' s domestic ISDN traffic. Ref. Paper C26	**Noted**
10.6	TM presented its ISDN ASR for PPM and European carriers. It was noted that CHT was found to have a relatively lower NER than the other carriers. On the	**Noted**

	other hand, only Switzerland, Italy and U.K. among the basket of European carriers have established ISDN circuits with TM. Ref. Paper C30, C31	
10.7	Singtel presented ASR measurements for ISDN towards PPM and European carriers, citing that call volumes greatly affect the reliability of the statistical data. Ref. Paper C23	**Noted**
10.8	Indosat presented its ISDN ASR to PPM and European carriers which was derived from CDR data. It was noted that measured ASR was very unstable and that the sample size obtained was quite small. Indosat further advised of its findings that fraud can be prevalent on ISDN whereby the callers utilize the User-to-User Information. CHTI replied that it has implemented charging UUI interchange to avoid fraud. Ref. Paper C49	**Noted**
11	**VoIP**	
11.1	The Chairman advised that a PPM task force shall be convened to specifically handle further development in the measurement processes and improvement initiatives for VoIP technology The following papers on VoIP are reactions to AP 20 and AP21 of the Taipei Meeting to provide updates on the VoIP connections of each carrier within PPM, and efforts to manage service performance measurements for this technology.	**Noted**
11.2	CAT presented its VoIP facility configuration with Singtel. Ref. Paper D01	**Noted**
11.3	CHTI presented their VoIP configuration, which has connections to all PPM carriers. Ref. Paper D02	**Noted**
11.4	KT presented its VoIP facility configuration, having been established since January of 2001. Ref. Paper D03	**Noted**
11.5	PLDT presented its service performance indicator scheme and current VoIP connections to PPM members as contained in two papers. Ref. Paper D04, D05	**Noted**
11.6	Singtel presented its own VoIP network configuration and basic functions and features of their Clarent VoIP gateway. Existing connections include those towards the Meeting of Asian Carrier' s (MAC) members, namely: PLDT TM CHTI KDD	**Noted**

	KT INDOSAT CAT Singtel also presented its performance indicators used for VoIP which include measurement of Soft and Hard Quality Parameters, and the network tools which assist them in generating these measurements. Ref. Paper D06, D07	
11.7	Reach presented a description of its current VoIP network and configuration, as well as concerns on the issues being encountered for this technology. Reach uses Cisco and Clarent gateways. It was noted that the inability of Clarent equipment to avoid in-call overloads has negatively impacted the service. Reach further stressed the need to have a maintenance tool to count VoIP traffic, segregate voice, data and fax statistics, calculate ASR, and estimate lost packets. Ref. Paper D08, D09	**Noted**
11.8	TM presented papers on VoIP Connection, VoIP ASR to PPM Countries, and the VoIP service offered. Ref. Paper D10, D11, D12	**Noted**
11.9	The VoIP Task Group will be composed of Reach, SingTel, PLDT, TM, Concert, TNZ & CHT-I. Reach shall head the Task Group. The Task Group is expected to provide the recommendation on the VoIP Service Performance Measures Definition and Call Failure Analysis Scope. The study will already include information on carriers' capability to support these recommendations. The study is for presentation and possible adoption by PPM-ICS by next meeting. Another action point is to document all existing VoIP connections within PPM . Carriers who were unable to provide this information at this meeting are requested to provide these to PLDT soonest for collation. PLDT will then send back the completed matrix to the member carriers.	**AP17, VoIP Task Group** **AP18, All, PLDT to collate**

(End of Day 2)

PPM-ICS Sub-Committee Meeting

7-9 August 2001

Sydney, Australia

MINUTES OF MEETING (DAY 3)

12	Day 3 began with the review of Day 2 Minutes.	**Noted**
13	**Updates to Bilateral Agreements**	
13.1	PLDT presented updates to its Service Level Agreements, particularly with KDDI and TM. Ref. Paper E01	**Noted**
13.2	PLDT presented updates to its Service Improvement Initiatives with CHTI, Concert and Reach. Ref. Paper E02	**Noted**
13.3	PLDT also presented a paper on for the Summary of Results of Service Improvement Bilateral Activities, with statistics on agreements generated from the Cebu Meeting in 1999 up to the Taipei Meeting of 2000. The Chairman explained the handbook definitions of Operational Excellence Program, Service Level Agreements, and Service Improvement Initiatives. Ref. Paper E03	**Noted**
13.4	Singtel presented updates to its bilateral agreement with Indosat. It was noted that a slight drop in ASR in March was attributed to an unusual behavior for specific b-number. Ref. Paper E04	**Noted**
14	**Other Matters**	
14.1	Reach presented a paper describing the prevalent condition in international telephony whereby carriers are beginning to treat international traffic as a commodity, rather than service. Reach noted that they now control their PSTN routing via Reach' s Trading Room. Ref. Paper F01	**Noted**
14.2	Reach presented a general overview of the formation of Reach as a strategic partnership between Telstra and Pacific Century Cyber Works. Ref. Paper F03	**Noted**
14.3	TNZ presented the changes to its Domestic Operator Services, however, it was noted that this does not affect incoming international traffic to New Zealand. Ref. Paper F04	**Noted**

14.4	TNZ also presented a paper describing the relevance of exerting efforts to non-PPM members and recommended to possibly include other carriers in the region that have significant influence on PPM ASR. The Chairman advised of standing arrangements regarding the composition of the PPM. Nevertheless, the Chairman advised that a proposal shall be sent to the Service Quality Prime Chairman based on the collective recommendation of the carriers in ICS. Ref. Paper F05	**Noted** **AP19, Chairman**
14.5	TNZ advised that they have just received several papers, which are relevant to the topics of the previous day sessions and requested that these be included in the file compilation for information of the members.	**Noted**
15	**PPM Hosting**	**Noted**
15.1	The Chairman requested Concert to come up with an official proposal regarding hosting one of the upcoming scheduled PPM ICS Meetings to replace the cancelled San Diego Meeting. Concert acknowledged and advised that a proposal shall be submitted.	**AP20, Concert**
15.2	The Chairman officially requested the next host, Singtel, to hold the next meeting tentatively in the latter part of November. Singtel to provide information on the proposed date of the next PPM Meeting.	**AP21, Singtel**
16	A presentation and demonstration by Mr. Peter Coulson on ExADT, an automated exchange data generation and loading tool, was made.	**Noted**
17	**Breakout Sessions**	
17.1	The Chairman requested TM to lead the arrangements for the bilateral discussions between carriers.	**Noted**
17.2	PPM Carriers conducted bilateral discussions and agreements with co-partners.	**Noted**
18	**PPM-ICS Homepage Development**	
18.1	PLDT presented the development status of the Homepage. The agreed homepage design was shown to all carriers and the following comments were raised: CHTI and CAT requested inclusion of the company name in addition to their individual logo. The Telstra logo shall be replaced with an official Reach logo, a copy of which is already available in one of Reach' s presentations for this meeting.	
19	**Closing**	
19.1	The Chairman expressed appreciation to Reach for the efforts exerted by the host in ensuring the smooth conduct of the meeting.	

(End of Day 3)