



AUSTRALIAN STOCK EXCHANGE

CHESS PROJECT

REPORT TO THE DEPARTMENT OF THE TREASURY
AND REQUEST FOR APPROVAL FOR PAYMENT OUT OF SIDA
FOR THE PERIOD FROM
1 DECEMBER 1995 TO 19 AUGUST 1996

31 OCTOBER 1996

TABLE OF CONTENTS

	PAGE
1. INTRODUCTION	1
2. PROJECT CONTROL AND ADMINISTRATION	3
3. PROJECT ORGANISATION AND STAFFING	4
4. SYSTEM DEVELOPMENT	5
5. USER SERVICES	8
6. LEGAL AND REGULATORY FRAMEWORK	10
7. BUSINESS ANALYSIS	14
8. TESTING	15
9. BUSINESS POLICY MATTERS	16
10. ASTC BOARD MATTERS	17

APPENDIX 1

CHESS PROJECT EXPENDITURE REPORT AND REQUEST
FOR PAYMENT APPROVAL FOR THE
PERIOD 1 DECEMBER 1995 TO 19 AUGUST 1996

SCHEDULE AS DEFINED IN SECTION 5.2 OF THE
MEMORANDUM OF ARRANGEMENT

1. INTRODUCTION

- 1.1 This is the final report submitted in accordance with clause 5.1 of the Memorandum of Arrangement between the Attorney-General's Department and the Australian Stock Exchange governing the procedure to be followed by ASX to obtain authorisation for payments from a development account under section 945 of the Corporations Law for the purpose of undertaking and completing the CHESS project.
- 1.2 The previous Attorney-General gave approval for recovery of the costs of implementing CHESS Phases 1 and 2 as well as direct development costs, subject to the proviso that total recoveries did not exceed the agreed \$35 million. In accordance with that approval, in this claim ASX seeks approval for payment of \$4,764,000, comprising development costs of \$3,786,000, and implementation costs of \$978,000.
- 1.3 This final re-imbursement of expenditure will bring the total re-imbursement for the CHESS project to some \$34,650,000; i.e. \$350,000 under the maximum re-imbursement of \$35 million as set out in clause 2.1 of the Memorandum of Arrangement dated 1 July 1992.
- 1.4 Major activities undertaken during the period covered by this report were the completion of development of CHESS Phase 2 (Delivery versus Payment settlement facilities), implementation of the settlement facilities, and upgrading equipment capacity for full system load. CHESS DvP settlement was introduced for a pilot group of securities in April 1996, but its extension to all CHESS-approved securities was delayed primarily because of software problems being experienced in the back office systems of a significant number of CHESS participants. Transactions in all CHESS-approved securities became eligible for DvP settlement from 12 August 1996, and the first DvP settlement encompassing all securities occurred on 19 August 1996. Further significant implementation work related to the framework and procedures for bringing the securities of foreign domiciled issuers into CHESS, and arrangements for holding of uncertificated securities as collateral by financers.
- 1.6 Throughout the period covered by this report there has been a steady growth in the number of holdings held in uncertificated form on the CHESS subregister. As at 30 September 1996 over 200,000 investors had holdings on the CHESS subregister, and the value of those holdings was some \$201 billion - over 55% of the ASX market capitalisation for domestic securities.
- 1.7 We are pleased to note that for CHESS ASX has received an Australian Information Industry Association award for excellence through information technology.
- 1.8 This report addresses the main activities undertaken by the project during this reporting period under the following headings:
 - project control and administration;
 - project organisation and staffing;
 - systems development;

- production and user technical support;
- user services;
- legal and regulatory framework;
- business analysis;
- testing;
- business policy;
- ASTC Board matters.

Under each heading implementation activities have been segregated from project activities.

2. PROJECT CONTROL AND ADMINISTRATION

2.1 During the period covered by this report the main activities in project control and administration were:

- maintenance of the project plan to reflect continuing development and implementation activities for Phase 2;
- processing of timesheet data;
- reconciliation of task plans between the subprojects in each of the major areas (Systems Development, User Services and Legal/Regulatory Framework);
- relocation of project personnel.

2.2 The SIDA claim for the period 1 July 1995 to 30 November 1995 was prepared and submitted.

2.3 Following a fire in an adjacent building, part of the premises occupied by CHESS project and implementation staff was deemed to be unsafe for occupation, and accordingly it was necessary to arrange emergency relocation of staff for a period of about six weeks.

2.4 The six monthly ASX Internal Audit review of system controls and other risks of the CHESS system was completed.

2.5 When in April the initial introduction of DvP settlement for a pilot group of securities revealed significant limitations and problems with a number of the participant back office systems which connect to CHESS, it was necessary to undertake emergency replanning for implementation, and to review in detail the possible consequences of a significant number of brokers being unable to directly settle their transactions through CHESS. Fortunately by delaying the full implementation until August these adverse consequences were avoided.

2.6 As a result of the fire in the adjacent building, acid contaminated water penetrated ASX's 20 Bond Street computing facilities, and through air circulation a film of corrosive moisture was deposited on circuit boards of the CHESS computers and other ASX electronic equipment in that site. On expert advice that mere decontamination of the surfaces of the circuit boards would not alleviate future reliability problems arising from corrosion, all of the CHESS computer equipment at the 20 Bond Street site was subsequently replaced, with the cost being met by insurers.

3. PROJECT ORGANISATION AND STAFFING

- 3.1 Project staffing declined progressively from the total of 36 full time equivalents that prevailed at the beginning of December 1995.
- 3.2 As at October 1996, the Settlement Operations unit, which now operates and supports CHESS, comprised 39.4 full time equivalent staff.
- 3.3 During the period covered by this report Minter Ellison continued to provide legal input to the project, particularly in relation to contracts with banks governing DvP settlement arrangements, and in relation to our application to the Australian Competition & Consumer Commission for authorisation of the SCH Business Rules for Phase 2.
- 3.4 In their capacity as external systems auditors, KPMG Peat Marwick provided input by way of devising audit procedures for monitoring adherence to the Phase 2 controls, and checking compliance with those controls prior to implementation of the system.

4. SYSTEM DEVELOPMENT

4.1 During the period system development work has concentrated on the following project tasks:

- Phase 2 software development;
- development of system enhancements based on operational experience with Phase 1;
- planning for the cut-over to Phase 2 operations;
- equipment capacity planning and upgrading to support full operational load;
- tailoring facilities to support a rehearsal for Phase 2 operations;
- management of the Systems Development group;

and on the following implementation tasks:

- technical support for user testing, internal QA testing and external auditor testing;
- advising external parties on improving performance of their CHESS interfaces;
- supporting the CHESS project environment;
- implementing emergency procedures such as provision of hard copy reports of CHESS messages, in the light of operational difficulties experienced by some users following introduction of Phase 2 for the pilot group of securities;
- scheduling the progressive replacement of CHESS computer equipment in the aftermath of the fire in an adjacent building.

4.2 Comments on Systems Development progress:

4.2.1 *Project work:*

- 4.2.1.1 Significant effort was undertaken in performing parallel runs with production data and ASX SEATS trades in a test environment before commissioning the Phase 2 production environment.
- 4.2.1.2 A new version of the messaging software (MSR version 9) was completed and released into production after QA testing. This release included performance enhancements, new operator functionality, functions to meet Phase 2 job scheduling requirements, and corrections for some previously encountered problems.
- 4.2.1.3 Special variants of the CHESS PC (CPC) software were developed to support a simulated Phase 2 environment for a weekend dress rehearsal. These included facilities to:

- simulate the actions of the Securities Lending Service provider in authorising or rejecting loan requests, thus enabling external parties to test the use of the Lending Service during the rehearsal (given that the Lending Service provider itself declined to participate); and
- facilitate automatic matching of transactions on behalf of participants who had chosen not to participate in the rehearsal.

4.2.1.4 Development work was undertaken to implement a number of enhancements to the basic Phase 2 settlement functionality. These facilities included:

- reporting facilities to support Compliance activity;
- reporting to TNS Clearing in its role as central counterparty to broker/broker transactions;
- further automation and reporting to support the operations of the ASX Securities Lending Service; and
- reporting requirements for the Securities Exchanges Guarantee Corporation (SEGC) in the event of a broker insolvency.

4.2.1.5 In the light of experience with Phase 1 operational processing loads and data storage requirements, and testing experience with Phase 2 facilities, an equipment capacity planning exercise was undertaken. As a result of that exercise, the following equipment upgrades were effected:

- the main production processor at 20 Bond Street was upgraded from a DEC dual processor 7620 to a DEC dual processor 7820, giving a nominal 50% increase in processor capacity;
- the standby and load sharing processor at 20 Bond Street was upgraded from a uniprocessor 7610 to a dual processor 7620, for a nominal 100% increase in capacity;
- the standby production processor at Bondi was upgraded from a uniprocessor 7610 to a uniprocessor 7810, for a nominal 50% increase in capacity;
- the development testing processor at the back-up site was upgraded from a dual processor 7620 to a dual processor 7820, to keep it fully compatible with the main production capacity;
- all existing disk drives were upgraded from DEC "RA" series to DEC "RZ" series, giving a nominal 50% performance improvement;
- an additional 20 gigabytes of disk storage were also installed, to enable transaction data to be held "on-line" for a longer period. We had previously planned on data being "rolled off" on-line storage onto CD-ROM archive storage after thirty days. However, we were experiencing an increasing volume of requests for reports from the CD-ROM archives, and that was introducing a labour intensive process. With the additional storage we expect to hold up to six months' transaction data on-line;

- to reduce the probability of failure in the giga switches which form part of the disaster recovery link between Bond Street and the back-up processing site, a redundant processor board was installed in each of the two switches.

All of these equipment upgrades were achieved within the original equipment cost budget for the project.

4.2.2 *Implementation work:*

- 4.2.2.1 Considerable effort was devoted to tuning the performance of the production system, particularly in order to take advantage of the additional hardware capacity that had been installed. This work, coupled with the additional hardware capacity enabled the availability time for end-of-day reporting to be brought back to around 10:30pm (Sydney time).
- 4.2.2.2 Additional utility functions were implemented to enable better management of the CHESS operational system. These included:
 - facility to enable messages to be redirected and resent in circumstances where a CHESS user has changed its CHESS communications access point; and
 - a "watch dog" facility to help detect any stalling or slowing down of CHESS processing. We had previously experienced such a problem in obscure circumstances, attributable to our use of the Oracle RdB database product.
- 4.2.2.4 The number of sponsored holders on the CHESS system has already far exceeded the original "design volume" of 100,000. Accordingly it was necessary to re-examine the way in which we electronically interface to the external mailing house which is contracted to perform our holding statement printing and mailing. This required redesign and further development work on the electronic interface between the central CHESS system and the mailing house.
- 4.2.2.5 The PC based software developed to prepare monthly Stamp Duty returns for the eight State Revenue authorities was enhanced with the introduction of data compression to reduce the number of diskettes required to provide the data to the major revenue authorities in New South Wales and Victoria.
- 4.2.2.6 In the light of problems experienced by some brokers when Phase 2 was implemented for a pilot group of securities, emergency arrangements were set up to enable the contents of CHESS messages to be printed, and hard copy message reports delivered to brokers requiring them.

5. USER SERVICES

5.1 The main project activities undertaken during the period were:

- liaison with individual user organisations and service providers;
- assisting users in preparation for the Phase 2 rehearsal;
- liaison with user groups in regard to rescheduling of the full implementation date for Phase 2, following difficulties experienced by some participants after the start of pilot operations in April;
- undertaking training sessions to explain Phase 2 operations to participants;
- liaison with payment providers;

and implementation activities undertaken included:

- continuing liaison with share registries and the Securities Registrars Association;
- explaining the concept of CUFS (CHESS Units of Foreign Securities) to potential issuers, registries and CHESS participants;
- liaison with share registries in New Zealand in anticipation of bringing New Zealand domiciled issuers into CHESS.

5.2 Comments on User Services progress:

5.2.1 *Project work:*

5.2.1.1 Considerable effort was devoted to encouraging users to participate in a full dress rehearsal for Phase 2 operations, which was scheduled to take place in February 1996. When the rehearsal was originally offered in late 1995, some sixty-eight participants indicated that they would take part, together with eleven banks. However when the rehearsal was finally conducted over the weekend of 24/25 February, the numbers were reduced to seven brokers, twenty-five non-broker participants, ten client banks, and the CHESS bank. The Reserve Bank was not disposed to participate in the rehearsal by operating a RITS test system over the weekend, but this did not unduly devalue the rehearsal. The rehearsal certainly helped to focus the minds of participants and their service providers concerning the state of readiness of their systems interfacing with CHESS, and in that respect it was not an entirely wasted effort even though the number of organisations taking part was disappointingly small.

5.2.1.2 User Services staff continued to traverse the country providing training sessions in Phase 2 concepts for participants.

5.2.1.3 Liaison work was also carried out with banks who were providing payment facilities to CHESS participants under the DvP arrangements, to help to ensure that banks were undertaking adequate preparations for the new environment. In addition, in conjunction with the CHESS Testing group, a number of bank only system and procedure tests were undertaken (i.e. without involvement of CHESS participants).

- 5.2.1.4 Effort was devoted to attempting to encourage brokers whose systems were not performing satisfactorily for Phase 2 functions to undertake contingency planning, and to exercise more pro-active control over third party service providers who were responsible for their back office systems development. Finally these efforts yielded some success, but only after the introduction of Phase 2 for a pilot group of securities brought home to brokers the harsh reality that some of their systems were both deficient in functionality and unable to cope with full Phase 2 processing volumes. The predicament in which this significant minority of brokers found themselves reflected insufficient attention to detail on their part in relation to software development being undertaken by their back office service providers over the preceding twelve months. Fortunately they were able to make a reasonable recovery from these problems by August 1996.
- 5.2.1.5 Some advisory support was given to CHESS participants in their negotiations with banks on the terms of contracts between participants and banks for the DvP settlement. The most vexing of all were proposed indemnity provisions in the contracts originally sought by banks. Some banks, for example, proposed that their customers should "unconditionally and irrevocably" indemnify them against any liability or loss arising out of a malfunction or failure in the bank's computer software used in connection with CHESS transactions!

5.2.2 *Implementation work:*

- 5.2.2.1 User Services staff were active in explaining the concept of CHESS Units of Foreign Securities (CUFS) to CHESS participants. This work was undertaken in anticipation of the securities of foreign companies being brought into CHESS in the form of CUFS.
- 5.2.2.2 It transpired that some brokers' back office software modifications to accommodate Phase 2 introduced flaws in software that had previously operated correctly for CHESS Phase 1 transactions. User Services staff assisted some brokers in sorting out the Phase 1 problems arising from the switch over to composite software supporting both Phase 1 and Phase 2 CHESS functionality.

6. LEGAL AND REGULATORY FRAMEWORK

6.1 The main project activities undertaken during the period were:

- continuing negotiations with the Australian Payments Clearing Association concerning the stand client bank deed;
- negotiations with the National Australia Bank on the terms of the CHESS bank deed;
- negotiations with the Australian Competition & Consumer Commission concerning authorisation of the Phase 2 Business Rules;
- completion of the Phase 2 Business Rules and lodgement for approval by the ASC;
- continuing negotiations with the Reserve Bank regarding the role of RITS in CHESS settlement;
- negotiations with Stamp Duty authorities regarding FID exempt clearing accounts;
- negotiations with the New Zealand Securities Commission concerning introduction into CHESS of the securities of New Zealand domiciled issuers;
- making arrangements for, and agreeing with APCA, the appointment of a Payments Appeal Tribunal to hear appeals against action taken by ASTC to suspend or terminate a bank's ability to provide payment facilities for CHESS participants (in defined circumstances under the Standard Client Bank Deed);
- investigating possible courses of legal redress (under the Trade Practices Act) that might be open to ASTC in relation to brokers or broker service providers whose lack of system readiness was responsible for delaying the full introduction of CHESS Phase 2;

and implementation activities undertaken were:

- negotiations with ASX Membership Department about potential consequences of the full implementation of CHESS proceeding while a number of brokers had deficient back office systems - in particular to explore arrangements under which some brokers may have been suspended from trading in this circumstance;
- review of ASTC expedited disciplinary procedures, in the light of operational experience;
- review of procedures for conduct of disciplinary and appeal tribunals under the SCH Business Rules governing Phase 1 and Phase 2, in consultation with the President of the Appeal Tribunal;
- initial work to prepare for an application to the Australian Competition & Consumer Commission for re-authorisation of the SCH Business Rules, given that the current authorisation expires in July 1997;

- negotiations with the ACCC concerning authorisation of SCH Rule amendments to encompass CUFS.

6.2 Comments on Legal and Regulatory progress:

6.2.1 *Project work*

6.2.1.1 Following protracted negotiations, in February 1996 agreement was reached with APCA on the Standard Client Bank Deed governing the obligations of individual banks and ASTC in relation to the provision by banks of payment facilities for CHESS participants in the DvP environment. In some respects, on our part these negotiations were concluded more out of exhaustion than satisfaction with the final terms. We hope that in the light of operational experience it may be possible to negotiate variations to some of the terms, particularly in relation to the timely performance of functions by banks during the daily settlement cycle. In effect after the start of settlement processing at 10:30am each day, the parties have prescribed tranches of time in which to perform various functions, with the aim of ensuring that the settlement process is concluded in the early afternoon (preferably no later than 1:30pm). Since DvP settlement depends on a "zero sum" being achieved across all inter-bank commitments arising from the overall CHESS settlement, timely conclusion of the settlement process is dependent upon the timely processing by all banks within the CHESS user group of RITS. Unfortunately the banks declined to agree initially that RITS regulations should be amended to allow the CHESS bank to release to ASTC details of other banks' operational performance as members of the CHESS user group.

6.2.1.2 Again after protracted negotiations, terms of the CHESS Bank Deed were finally agreed with the National Australia Bank in February 1996.

6.2.1.3 As was reported in the previous SIDA claim report, the ACCC finally authorised the Phase 2 Rules, but only on the basis that the authorisation terminates in July 1997, by which time we are required to have determined a means by which building societies, credit unions, and their special service providers can become payment providers under the SCH Business Rules. To encompass this condition of the authorisation, we were obliged to introduce the concept of a "financial supervisor" which would have authority for approving an entity as a CHESS payments provider. The difficulty will be in finding any entity which is prepared to act as the financial supervisor, given that payments providers in CHESS do undertake some substantial indemnities, and the supervisor should really be making a judgement about the capacity of any entity to stand behind those indemnities.

6.2.1.4 The SCH Business Rule amendments for CHESS Phase 2, and the corresponding ASX Business Rule amendments were both formally promulgated in March 1996.

6.2.1.5 The at-call funds facility required by ASTC to cover the circumstances of a broker insolvency (i.e. pending recovery of funds from the National Guarantee Fund) was set up with ASX Operations acting as the funds provider. If the funds facility has to be called upon at short notice on any settlement day, ASX Operations will if necessary liquidate part of its portfolio of bills and certificates of deposit to meet the funding requirement within an hour.

6.2.1.6 It was negotiated and agreed with APCA that APCA will meet 50% of the retainer costs of the Payment Provider Appeal Tribunal set up to hear appeals against

suspension and termination actions taken by ASTC under the Standard Client Bank Deed.

6.2.2 *Implementation work:*

- 6.2.2.1 In the light of operational experience, further amendments to the SCH Business Rules were implemented. In particular there were Rule amendments to overcome some perceived limitations on the legal framework in relation to issuer sponsorship, and as a result of those amendments we hope to see more companies decide to move to fully uncertificated registers by introducing issuer sponsorship, and closing their certificated registers. Virtually all new companies listing on the Exchange now adopt fully uncertificated registers. However, existing companies with a long history of certificated holdings have been reluctant to move to fully uncertificated registers. It was encouraging to see the Commonwealth Bank of Australia choose to adopt fully uncertificated registers from November 1996.
- 6.2.2.2 Negotiations continued with regulatory authorities in both New Zealand and Papua New Guinea to try to enable ASX traded securities of issuers domiciled in those countries to be made CHESS-approved. For PNG this is occurring on a case by case basis for newly listed companies. For New Zealand companies, there have been protracted negotiations with the New Zealand Securities Commission, leading to a requirement for an Order in Council to be adopted by the New Zealand Parliament.
- 6.2.2.3 SCH Business Rule amendments for CUFS (CHESS Units of Foreign Securities) were approved by the ASC/Treasury, and authorised by the ACCC in June 1996.
- 6.2.2.4 A letter of "no interest" concerning CUFS was negotiated with the US Securities and Exchange Commission, as an extension of the SEC's previous letter in relation to section 17(f) of the US Investment Company Act of 1940.
- 6.2.2.5 A program of routine inspections of a sample of registries and non-broker participants was undertaken to check compliance with the SCH Business Rules. Similar inspections in relation to brokers were undertaken on behalf of ASTC by the ASX Membership Department.
- 6.2.2.6 One significant infringement of the SCH Business Rules on the part of a participant was dealt with by way of the expedited disciplinary procedures that are covered by the SCH Business Rules. As a result of that experience a protocol for handling expedited disciplinary proceedings has been developed.
- 6.2.2.7 There have been continuing negotiations with State Revenue authorities in relation to the following matters:
 - FID liability on clearing accounts maintained by non-financial institutions that are CHESS participants;
 - amendments to Stamp Duties legislation to accommodate CUFS - i.e. to ensure that duty obligations in relation to CUFS are no different to any other security;

- determining the correct nexus for stamp duty on off-market transactions in stapled securities, in circumstances where the different component securities if traded separately would have a different state nexus.
- 6.2.2.8 Work has been undertaken to assist banks in coming to terms with the uncertificated holdings environment in relation to collateral. Banks appear to have largely ignored this problem while uncertificated holdings have spread progressively since 1989, but they are now focused on the issue and we are exploring ways in which the SCH Business Rules might be adapted to better accommodate holding of uncertificated securities as collateral by banks. We note that margin lending institutions have already enthusiastically embraced CHESS, under the current Rules, for this purpose.

7. BUSINESS ANALYSIS

7.1 During the period Business Analysis concentrated on the following tasks:

- on going work on RIPS (Requirements, Issues and Problems);
- preparation of Clearing House Procedure documentation;
- updating of user Procedure Guidelines;
- devising Clearing House procedures for Phase 2
- Procedure Guidelines for the Securities Lending Service in the CHESS environment.

7.2 Comments on Business Analysis progress:

7.2.1 *Project work:*

- 7.2.1.1 New versions of all three user Procedure Guidelines (Issuers & Registries, Brokers, and Institutions & Custodians) were released in preparation for Phase 2 operations.
- 7.2.1.2 Bank procedures to cover the CHESS DvP settlement environment were debated at length with the Australian Payments Clearing Association and the major banks, and ultimately agreed. A significant amount of time and effort was required to reach agreement, particularly in relation to fall-back procedures; i.e. the use of fax communications in the event that a bank computer link with CHESS is out of action.
- 7.2.1.3 Various fail fee arrangements for CHESS Phase 2 were analysed and submitted for consideration by the ASTC Board as part of the process of determining the level of fail fees to be applied.
- 7.2.1.4 Securities Lending Service procedures were documented in preparation for CHESS Phase 2.

7.2.2 *Implementation work:*

- 7.2.2.1 User procedure guidelines were updated to include procedures relating to CUFS.
- 7.2.2.2 Analysis work was undertaken to prioritise some seventy issues arising out of requests for changes or enhancements to CHESS system functionality.
- 7.2.2.3 A CHESS Business Advisory Committee, comprising some twenty practitioners from all industry sectors, was established to provide industry input to decisions concerning the adoption of enhancements, and assigning priority to enhancement work.

8. TESTING

8.1 The main testing activities undertaken during the period were:

- QA testing of Phase 2 software;
- implementation of an external user test environment for Phase 2;
- accreditation of Phase 2 users;

and implementation activities undertaken were:

- QA testing of Phase 2 software;
- accreditation of Phase 2 users;
- a series of rehearsals involving commercial banks and the Reserve Bank;
- assisting external auditors in the use of their test environment in relation to Phase 2;
- continuing QA testing for fixes and enhancements to the Phase 1 software.

8.2 Comments on Testing Progress:

8.2.1 *Project work:*

8.2.1.1 Support for participants and banks in their testing of software interfacing to CHESS, and accreditation testing of their Phase 2 interfaces, was a major workload in the early part of the period covered by this report. The poor state of readiness for Phase 2 on the part of some brokers' systems, coupled with the fact that implementation of their software changes to accommodate Phase 2 in some cases disrupted software that had previously worked successfully with Phase 1 transactions, placed major demands on our Testing support resources.

8.2.1.2 The bank interface for CHESS is significantly simpler than the participant interface, and banks generally were well prepared for their accreditation tests. The Testing group co-ordinated a number of rehearsals with commercial banks and the Reserve Bank.

8.2.2 *Implementation work:*

8.2.2.1 The Testing group continued routine QA testing of software implementing enhancements and bug fixes, prior to software being released into production use.

8.2.2.2 The Testing group was also heavily involved in running the major Phase 2 dress rehearsal that occurred over the weekend of February 24/25.

9. BUSINESS POLICY MATTERS

9.1 The concept of CHESS Units of Foreign Securities (CUFS), which was referred to in the previous report of 29 February 1996, was brought to fruition through finalisation of the legal and procedural framework. We are pleased that as of the date of this report, two foreign issuers have adopted CUFS.

9.2 The question of providing certainty of registration for buyers of securities that are subject to foreign ownership restrictions (for example Qantas), continues to generate difficulties. We have proposed a number of possible approaches to alleviate the problem, most recently a scheme using depositary receipts in a framework similar to that created for CUFS for foreign securities. However, to date we have not been able to reach any consensus between issuers and participants on a preferred approach.

9.3 Early in 1995 we took a decision not to pursue the idea of enhancing CHESS with Electronic Trade Confirmation and electronic contract note facilities. At the time we had an overriding need to avoid introducing system changes which would impede our users in achieving target dates for introduction of Phase 2. However, after the introduction of the Phase 2 pilot operations, we have again turned attention to the question of trade confirmation, and ASTC is now exploring the possibility of extending CHESS services in this area. In part it is seen as a facility which will help alleviate problems in moving to a trade date plus three business days (T+3) settlement environment.

9.4 Clearly the move to T+3 settlement has also been delayed because of the delay in full implementation of CHESS Phase 2. At this stage we have loosely set the goal of implementing T+3 before the end of 1997.

10. ASTC BOARD MATTERS

10.1 During the period the ASTC Board met on 1 December 1995, 2 February 1996, 1 March, 29 March, 3 May, 29 May, 5 July, and 2 August.

APPENDIX 1

**CHESS PROJECT EXPENDITURE REPORT
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FOR THE PERIOD 1 DECEMBER 1995
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OCTOBER 1996

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SCHEDULE AS DEFINED IN SECTION 5.2 OF THE MEMORANDUM OF ARRANGEMENT.

1. Actual vs Budget Expenditure (MoA 5.2.1)

	Project	Implementation	\$'000 Total
Actual Expenditure	3,786	978	4,764
Budget Expenditure	1,541	191	1,732
Variance	(2,245)	(767)	(3,032)

2. Task Completion Status (MoA 5.2.2)

All tasks associated with development and implementation of CHESS are now complete.

3. Statement by ASX Concerning Likelihood that Total Project Expenditure will Exceed the Budget (MoA 5.2.3)

The Project is now complete.

Total expenditure on development and implementation was some \$34,650,000, i.e. within the budget (including contingency) of \$35,000,000.

4. Project Progress Relative to Dates Specified in the Work Plan and Statement of Reasons for any Delays or Expected Delays (MoA 5.2.4)

The body of this report refers to delays experienced in the full implementation of CHESS Phase 2. The Project has now been completed and there will be no further delays.

5. Estimate of Amount by which Project Costs are Expected to Exceed \$35,000,000 (MoA 5.2.5)

The Project has been completed within the \$35 million limit.

CHESS Project Expenditure \$'000
Period: December 1995 - August 1996

Description	Actual this period	Budget this period	Variance for period	Actual to date	Budget to date	Variance to date	Estimated total expenditure (to mid-August 96)	Budgeted total expenditure	Variance total expenditure	Status
Phase 0										
Business Analysis	-	-		1,507	1,507	0	1,507	1,507	-	Complete
Phase 1										
Software Development	-	-	-	2,868	2,868	0	2,868	2,868	-	Complete
User Services	-	-	-	2,457	2,457	0	2,457	2,457	-	Complete
Legal & Regulatory	-	-	-	406	406	0	406	406	-	Complete
Infrastructure	-	-	-	45	45	0	45	45	-	Complete
Phase 2										
Software Development	413	219	(194)	1,471	2,019	548	1,471	2,019	548	Complete
User Services	595	276	(319)	1,782	1,402	(320)	1,782	1,402	(320)	Complete
Legal & Regulatory	102	64	(38)	362	243	(119)	362	243	(119)	Complete
Phases 1 & 2 (Composite)										
Business Policy	1	2	1	233	220	(13)	233	220	(13)	Complete
Project Management & Support	251	129	(122)	3,941	3,481	(460)	3,941	3,481	(460)	Complete
Legal & Audit Services	328	46	(282)	2,177	2,250	73	2,177	2,250	73	Complete
Travel & Public Relations	89	55	(34)	876	935	89	876	935	89	Complete
Computer Equipment	1,466	233	(1,233)	9,087	9,111	24	9,087	9,111	24	Complete
Ancillary Project Support	9	4	(5)	90	70	(20)	90	70	(20)	Complete
Occupancy	152	78	(74)	1,439	1,525	86	1,439	1,525	86	Complete
Administration	178	102	(76)	1,304	1,316	12	1,304	1,316	12	Complete
ASX Infrastructure Charges	203	333	130	2,105	2,161	56	2,105	2,161	56	Complete
Total Project Expenditure	3,786	1,541	(2,245)	32,149	32,107	(42)	32,149	32,107	(42)	
Implementation Expenditure (from Sept 1994)	978	191	(787)	2,501	1,681	(820)	2,501	1,681	(820)	
Total CHESS Expenditure	4,764	1,732	(3,032)	34,650	33,788	(862)	34,650	33,788	(862)	