

**Final Report on the
HL7 Working Group Meeting
held in
San Antonio, Texas,
7-12 May 2006**

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Executive Summary

The second HL7 Working Group Meeting for 2006 was held in San Antonio, Texas from 7 to 12 May. Ten Australians were present at the meetings out of 540 persons attending from 20 different countries.

The task force which has been reviewing the strategic directions of the HL7 organisation for the past nine months provided an update on its findings. Transition to a more globally-focussed HL7 organisation with a separate US Affiliate and increased full-time technical support for its standardisation activities is envisaged. However, major challenges in meeting strategic objectives include the need to approximately treble overall revenue and the creation of a corporate persona that appeals to the international community without losing current high levels of domestic US support. The implications for Australia will need to be identified and managed in due course.

At the regular meeting to review progress in harmonisation between HL7, ISO, CEN and IHE, the increased need for a single, compatible set of international e-health standards was noted. Strong political pressures are emerging in Europe between national programs, vendor interests and central EC directorates; these pressures may influence which standards are used. Recent developments in HL7v3, SOA and CEN, coupled with needs from the UK, Canada and the US represent a window of opportunity for harmonisation; however, delay in production of an international standard for the use of data types remains unacceptable. Some HL7 representatives expressed concern that parts of the prEN13606 (EHR Communication) standard are proceeding to CEN/ISO ballot before an agreed path for more substantial harmonisation with HL7v3 has been agreed. A group was formed to resolve these issues without unduly delaying to the balloting of EN13606 - it was subsequently resolved that Part 5 of ISO EN13606 should include an HL7v3 implementation guide to address this issue. It was noted that HL7 fast tracked 7 standards into the ISO adoption process at the Korea TC215 meeting in April – these included HL7v2.5, CDA r2 and CTS r1 .

One of the most significant technical developments addressed in San Antonio was the proposal put forward by the UK NHS (including a presentation by Grahame Grieve) to investigate a new means of producing HL7v3 messages for particular application domains based on a new UML-ITS, rather than the traditional RIM-based XML ITS. This is a radical departure which, if successful, may well lead to a new generation of HL7v3 messages that overcome many of the performance, cost and software engineering issues increasingly being experienced by the NHS. The proposal was accepted (as an investigatory process) by the HL7 Board and received considerably less objection than expected when presented to key technical committees – despite its far-reaching implications. It might be concluded that many of those closely associated with v3 message development now accept that it has some shortcomings and are looking for ways forward that provide more practical outcomes while protecting the fundamental discipline of relating requirements to the v3-RIM. (Further comment in Section 11 below)

Interest in the use of structured documents based on CDAR2 continues to grow. In the US, this is increasingly being driven by the need for a mandatory Continuity of Care Record (CCR) whenever a patient is transferred between providers and by

requirements for electronic claims attachments with this to be representable electronically in CDAR2 format as a Continuity of Care Document (CCD)

Structured documents were originally conceived as being patient-centric for inclusion in a single patient's record. CDA is now being used to record care guidelines and order sets and these more general uses challenge some of the assumptions underlying the CDA reference model. While currently proceeding independently, this use of CDA should ultimately be integrated with work on templates.

It was noted that CDA documents are emerging as part of national approaches to shared EHR in France, Germany, Japan, Korea and Finland. The appeal of CDA includes its inherent use of XML, its ability to be transported in many ways including HL7v2 messages, v3 messages, email, on media and via web-based services, and also its provision of an "incremental" pathway from relatively unstructured information interchange through to higher levels of semantic interoperability. Nevertheless, current CDA usage appears to be limited to the exchange of relatively unstructured information (similar to that used with R1). Definitive answers about templates, data types and common core components in relation to structured document artefacts are still issues for Australian implementations.

Work of the joint HL7/OMG Health Services Specifications Project (HSSP) was progressed through the Services Oriented Architecture (SOA) SIG, with Ken Rubin being re-elected as co-chair. The relationship between SOA and HL7 v3 messaging was examined at the Infrastructure and Messaging (INM) TC, which found that:

- SOA represents a paradigm shift from the traditional v3 messaging approach; therefore, SOA SIG should develop solutions within the SOA paradigm without necessarily using existing v3 message constructs
- Current message wrapper attributes provide requirements to be addressed in development of SOA solutions
- Messaging could rely more on service policies with a corresponding reduction in message attributes for establishing service characteristics.

HL7 is providing the lead on preparing Service Functional Models (SFMs) that define requirements, while OMG processes will be used to establish technical solutions via "vendor submissions": After some early friction, an agreement has been reached on involvement of IHE in HSSP activities.

It is increasingly becoming apparent that some of the core expertise in specialist areas such as CDA, RIM-methods, EHR etc needs to be more readily available to guide work in application domains and avoid fragmentation of the broader RIM model and/or wasted effort.

There was a lot of detailed work carried out on reconciliation of ballots in most of the technical committees with strong Australian participation in the work of the EHR, Patient Care, TermInfo, Structured Documents, Templates, Laboratory, Patient Administration and Community Based Health.

Overall, sound progress was made towards the achievement of Australian objectives for international standardization, and it is recommended that Australian participation in HL7 Working Group Meetings be sustained.

1 Introduction

The second HL7 Working Group Meeting for 2006 was held in San Antonio, Texas from 7 to 12 May. It was attended by some 540 people from 20 different countries, with large delegations from national implementation programs in the UK, The Netherlands and Canada comprising both managers and technical experts strongly committed to implementing the next generation of HL7 standards based on HL7 v3.

Ten Australians were present - David Rowlands, Richard Dixon-Hughes, Brett Esler, Dick Harding, Klaus Veil, Dr Peter MacIsaac and Chris Lynton-Moll along with Grahame Grieve and Kevin Moynihan (Jiva Medical) and Amanda Ryan (University of Wollongong).

2 International Affiliates Meeting

Thirteen countries were represented at the International Affiliates meeting, out of a total of 31 HL7 International Affiliates currently recognised by HL7. As usual, updates presented to the meeting provided a good overview of the state-of-play across the HL7 community and included the following.

2.1 General Reports

- Implementation Committee - v2 to v3 mapping is proceeding satisfactorily, but there is not much progress on implementation guides or the early adopters' registry. The US is working on v2.4 clinical results messaging and developing an implementation guide, which will be put to the Board for adoption but will be referred to the Implementation Committee first.
- HL7 education – a competency framework is being developed as a precursor for development of learning objectives, curriculum and accreditation processes. A plan has been prepared to develop a professionally-produced e-learning package at an introductory level on the topic "What is HL7". It will be freely available and widely distributed. The Board has provided funding for this. Work on a certification framework for this has not been very fruitful to date
- ISO TC215 - Fourteen (out of twenty four) participating member countries and two observer countries were represented at the Plenary meeting in South Korea in April. Items of special interest to HL7 include:
 - ISO 21731 – RIM: moving to final DIS stage without major issues. Should be published this year
 - ISO21090 - Data types: 3 part standard (ISO 11404;1994, basic; extended; HL7 data types). Part 2 going slowly
 - ISO 17113 – MDF: is in DIS re-balloting process, since there were some administrative/timing issues. Closes 15 May, should be published this year
 - HL7 submitted 7 new work items – Version 2.5; Clinical Document Architecture (CDA) Release 2; Clinical Terminology Service (CTS) Release 1; structured product labelling; individual case safety report; electronic submission of stability data; annotated ECG for clinical trial submissions

- EN13606-1 – EHR Communication, Reference Model (Part 1) is going to Draft International Standard (DIS) ballot in parallel with consideration by CEN
- ISO TS22220 – Identification of subjects of care. Progressing well
- TR22221 - Clinical data warehouses. Will go to ballot
- A joint CEN/ISO will be held in Geneva in October 2006, contiguous with a second Global Health IT Summit with a focus on the needs of the vendor community.
- CEN TC251 - HL7 Affiliates were invited to the last meeting, in Brussels. The meeting considered prEN13606. Concern was expressed about overlap with HL7 v3 – see ISO/CEN/HL7 coordination below. Other areas to be harmonised include data types and General Purpose Information Components (GPICs). It is unfortunate that Australia's interests in 13606 were not represented at the Brussels meeting.
- EHR TC – the EHR-System Functional Model DSTU (Draft Specification for Trial Use) lists functions which may be present in an EHR product and was published in July 2004. The functions are grouped under three main sections - Direct Care, Supportive (admin/research functions), and Information Infrastructure (security/system admin functions) with each function having associated conformance criteria. The DSTU is applied by defining profiles that identify the functions required for specific implementations. These profiles may relate to care settings, process domains (e-prescribing), vendor or buyer profiles, etc. The DSTU is presently being updated and submitted for acceptance as a full ANSI/HL7 standard. The recent committee-level ballot of conformance criteria failed and comments are being reconciled. The functional model is also being cleaned up editorially and a glossary is being developed. The glossary only contains terms peculiar to the functional model. The whole package should go to member ballot in August 2006. Other EHR TC work is on an interoperability model and a Personal Health Record Functional Model. Next steps include additional profiles.
- Europe – e-health priorities (patient summary, identifiers, emergency data set) to be developed this year, with work on them to be undertaken at the European e-health conference this week. Europe is looking at the US CCHIT approach to certification and whether there can be mutual recognition of US and European certification regimes. There is growing political tension within Europe between national interests (the need to get national programs moving), EU directives (which tie in the whole of Europe) and industry directions (which embrace global approaches or are based on the current focus in target markets). prEN13606 may be caught up in this.
- Preparation of the September Plenary and Working Group Meeting in Roca Baton, Florida from 10 to 15 September – the focus of the Plenary will be interoperability. There will be presentations from the 4 consortia that are building the US National Health Information Network. The aim is to have presentations from two international projects that represent two different geographic regions as well as two different architectures (volunteers include France, Netherlands, Netherlands, UK, Germany). There may also be some US regional presentations.

- International input for HL7 Harmonization Process – the International Affiliate committee currently has a separate vote in harmonization processes, but this has fallen into disuse. The view from the UK is that existing harmonization processes, which are heavily based around meetings in the USA, present barriers to international realms expressing and following up issues. The real key to input is ongoing liaison into the TCs that are generating work rather than a separate vote at the end, but this requires sustained international effort. This is also the Australian experience. The committee agreed to relinquish the separate international vote on harmonization.
- An international volunteer is sought for the Nomination Committee to recommend candidates for this year's Board elections – contact Mark Shafarman to nominate.
- Working Group Meeting (WGM) in May 2007 – this is now likely to be held in Cologne rather than Berlin. The contract is currently being negotiated. The backup is Dresden. The meeting will be split across 2 hotels. The financial impact for HL7 is that the usual \$75,000 profit on a WGM (which funds support staff, other standardization activities, etc.) turns into a \$50,000 deficit, due to meeting room costs being incurred, significantly higher costs for handling registrations, etc.
- Due Diligence Process for initial admission and continuation as national Affiliate organisations. An improved process has been developed for reviewing Affiliateship applications and making recommendations to the Executive Committee, who then forward their recommendation on to the Board of Directors for final approval. Following concerns over the impact of having moved too quickly against several new affiliates, the management of Affiliate status (eg moving Affiliate from active to lapsed status and termination) will now be overseen by a group including Klaus Veil (Australia), Grant Gillis (Canada) and Charlie McKay (UK).
- A name change has been suggested for the International Affiliates Committee – to "Affiliates Council". This reflects the desire for HL7 to be an international organisation with HL7 US as one of the Affiliates, rather than a US-centric organisation with international liaisons. This will be considered further within the HL7 strategic initiative.
- Results of IAC Co-chair elections - Klaus Veil, Miroslav Koncar (Croatia) and Jane Howarth (Canada) were re-elected. One position is still open (the HQ Liaison role). However, only four affiliates cast their votes. For some this was just an oversight, but this may also be related to the role being played by the committee, or the small size (and therefore capability to respond) of some of the Affiliates.
- International HL7 Interoperability Conference IHIC (formerly known as International Affiliates Meeting) - will be held in Cologne, Germany, August 24-25th. Deadline for call for Papers extended until May 15. There is likely to be a CDA Forum on the second day, and the primary focus for IHIC will be v3 implementation experiences (see HL7 website, Events). Medical Informatics Europe MIE follows from August 27-30 in Maastricht (Netherlands).
- HL7 Strategic Initiative – the strategic planning task force has focussed on 4 streams: New business model and organizational structure; Internationalization;

Product and Services Strategy; Optimising Volunteers and Resources. The resulting strategy is proposed to be implemented over three years and includes actions to position HL7 as a global SDO addressing the importance of affiliates; More effective structure; Enhancing web presence; Product orientated project management and quality testing. Getting paid staffing to the level believed to be required implies that revenue needs to rise from \$3m p.a. to about \$9m p.a. – a threefold increase. The Board is looking at business models to enable this. Summary notes from strategy presentations are attached as Appendix A.

2.2 International Affiliate Reports

Japan – HL7 Japan's membership is increasing and it is running 3 to 4 educational events per year. It has established a SIG on CDA and produced a document on CDA for referral & patient data, with digital signature, encryption and conformance to the IHE XDI draft. Conformance testing has commenced for the Shizuoka prefecture project, which was demonstrated to international delegates at the Hamamatsu TC215 meeting last September – this project is piloting the provision of patient EHR information on transportable media from physician CPOE systems based on HL7v2.5 and CDA referral documents. Cooperation has been established with CDISC Japan and there is strong support for 4 patient safety standards HL7 fast track through ISO. Japan continues to support HL7 and ISO work on clinical genomic markup languages – and extension of this work from SNP/STRP polymorphisms to become a Genomic Sequence Variation Markup Language (GSVML).

Sweden – is the most recently established HL7 International Affiliate, having been formed in February 2006 with about 30 member organisations, mainly vendors. It aims to facilitate understanding of HL7, provide fora for learning, etc, encourage Swedish involvement in the wider HL7 global community and cooperate with the Swedish Standards Institute (SIS), which provides the permanent secretariat. Seminars are planned on RIM, CDA, CCOW and v2.5.

Netherlands – is working on a GP professional summary, medication/pharmacy & electronic child health record, using v3. Work on HL7 and attendance of a strong Dutch delegation at HL7 meetings is supported by government-sponsored programs and institutions (including NCTIZ). Specialised Dutch implementation documents are being prepared on infrastructure management, data types and CMETS – with some implications being fed back into global HL7 work. There is a lot of work trying to more effectively integrate diagnostic/treatment codes used for reimbursement and statistical purposes into workflow and HL7 messages.

Australia – HL7 Australia recently held an educational seminar on web services, and will hold a two day conference in late May continuing this theme and focusing on implementation support. Australia has announced major investments in clinical terminologies and identifiers; has released an Interoperability Framework and Secure Communications paper and a Management Framework for standards development – see NEHTA site. Australian jurisdictions are stabilising on v2.4

UK – membership is steadily growing. A successful conference was held, and HL7 UK is holding 5 technical meetings per year of 2-3 days each. The Primer "Understanding v3" is selling well. The NHS Implementers Group is discussing what

they want from standards, as a separate group from the standards developers, although this group is now lacking some momentum despite starting strongly.

France – has also developed a v3 Primer. A national project has been established to develop a national EHR via 6 experimental sites. The approach is document based, and will use IHE XDS for transport. Two CDA documents have been written for this – a header implementation guide for the French realm; and an implementation guide for the care record summary. France is looking to submit these as realm ballots in HL7. They are also building a clinical laboratory report based on CDA.

NZ – is finalising v2.4 implementation guides for its major domains. A new Health Informatics strategy was released by the Ministry of Health, which includes significant support for HL7. An educational meeting in late May will feature K Ruin & W Goossen.

Switzerland – a national e-health strategy is being developed, including e-prescribing and patient summary record. Switzerland is using v2. HL7 Switzerland would welcome more input from the vendor community and implementers as most of those presently involved are academics, consultants and regulators.

Korea – has completed translation of v2.5. The Ministry of Health & Welfare has released a request for proposal for an EHR for the public health sector, using CDA Release 2. Korea is building a CDA document registry, and has built a CDA based referral instrument.

USA - use cases for national e-health have been developed and presented to the Health IT Standards Panel (HITSP), featuring bio-surveillance; the EHR; and consumer empowerment (PHR), but there is some disappointment with these. Implementation guides for these are supposed to be developed by year end, but this is looking unlikely. National Library of Medicine projects include a CDA build of an EHR based on the national use cases. HITSP has an international data collection activity – contact Jo Kaufman for the survey instrument. 20 US based vendors demonstrated CDA exchange at HIMSS, so vendor engagement with v3 in the USA is beginning.

Finland – membership has grown to 73 organisational members. CDA Release1 is being used in a number of areas. Development of national e-health infrastructure is now being driven by the Finnish welfare institute. v3 is being looked at, with a first draft of an implementation guide being developed.

Germany – there is a national project to establish an e-health platform. First priority is the health card, which incorporates social security. HL7 Germany is involved in certification & conformance testing with the Centre for Telematics, and in setting up major European conferences including MIA in Cologne. Germany is looking at relationships between HL7, CEN and ISO EHR standards.; and is also looking at significant CDA2 implementation.

Canada – has had a strong membership increase (30%), and held its first HL7 Educational event with 120 attendees. There has been a reorganisation of standards organisations, with Infoway now providing coordination of and consolidated secretariat support for HL7 Canada, TC215, DICOM, IHE Canada, LOINC, and SNOMED.

Croatia – is a small Affiliate, so has very targeted action. Attendance at educational events is mostly academic to date. Access to HL7 standards is an issue – they are available on CD for nominal amounts, but the local Affiliate is not allowed to copy these. They are available via download, but as a small Affiliate HL7 Croatia do not have a website to allow access to members, and want to consolidate members locally rather than have them join HL7.org. [It was noted that there are opportunities for countries with advanced website capability (or HL7 Inc) to support smaller affiliates by providing them with website infrastructure.]

3 International Coordination Meeting

A working session between representatives of ISO, CEN and HL7 was held to discuss harmonization and this is expected to become a regular event at each HL7 Working Group meeting.

The ISO TC215 Plenary outcomes were discussed. There was a desire to more fully harmonise CEN/ISO 13606-1, CDA, clinical statements, etc before CEN goes to publication. A small group (D Rowlands, C McKay, M Shafarman, K Heitman, R Stegwee, T Marley) met to consider the issues; develop fast track process; identify resources required and what harmonisation would mean; and come up with paper on what standard each is, where they fit, etc. This will be coordinated by TC215 and needs to address political as well as technical issues. In discussion of this item, Australia noted the considerable effort had already been expended on harmonization and the progress that had been made – it would be concerned if demands for further harmonization resulted in a loss of momentum or support for required EHR standards. It is understood that the impacts of further harmonisation will mainly be in parts 2, 3 and 5 of EN13606, which have yet to be put forward for ballot.

Global Health IT Summit, October 2006 – key vendors will articulate cases where implementation was made more difficult by lack of standardization, then have dialogue with standards community and develop of an action plan (note – this is similar to the NEHTA/Standards Australia event scheduled for 22 May). There is also a Eurorec meeting that week. Input is desired from international health IT industry associations (D Rowlands to put Ed Hammond in touch with Paul Doman of MSIA).

Tom Marley (UK) reported that ISO work on harmonising HL7, ISO and CEN data types is stalled due to lack of resources. A further project on harmonising CMETs & GPICS is really about understanding the differences and documenting the cases for their respective uses – Again, there is currently no progress since no-one has time to work on this

Templates & archetypes – Templates SIG is looking at 13606 archetype requirements in detail and will suggest some modifications to requirements (not major). The resulting revised paper will be co-badged.

Support was expressed to link the CEN Health Information Services Architecture (HISA) and HL7/OMG Health Services Specification Project (HSSP), and the timing is right to do so but there are difficulties in getting resources to get the two groups together. Again, ISO will aim to play a role in making this happen.

Semantic interoperability – there is an increasing option to identify what HL7 is good at and what CEN is good at and how to move between them.

HL7 is working closely with other standards organisations to ensure that where these standards exist they are used within HL7 and that HL7 links with them to provide our component of the standards infrastructure. A key example of this are the links with the emerging SNOMED international standards development organisation (SNOMED-SDO). HL7 Standards are being taken forward at the ISO and the prospect for harmonisation and collaboration with European Health IT Standards is gaining momentum.

While Integrating the HealthCare Enterprise (IHE) is not a standards developer (rather a standards user and implementer), there is close collaboration at HL7 with many of the leading IHE players also active in standards creation. IHE profiles have adopted HL7 version 2 messages in earlier profiles such as Radiology workflow, and have integrated the Clinical Document Architecture (CDA Standard) into the Cross Enterprise Document Share Profile. The XDS profile or variants are rapidly being adopted internationally (US regional health information organisations, and France are two examples).

4 Technical Steering Committee

New staff members were introduced - Andrea Ribick, Director of Communication, and Terrance Bennett, Director of Project Management Office.

Architectural Review Board (ARB) - have discussed Project Scope Statements, which encourage committees to describe what they're going to do. Committees are encouraged avoid acronyms and remember that people not familiar with HL7 are audiences for these documents. The Substantivity Document was included in ballot inadvertently and consequently received ballot comments; they will attempt to address those comments.

A proposal was presented to change the mission/charter of the Attachments SIG, with a change of sponsoring TC from Orders and Observations to Structured Documents. This raised the question of realms, which may increasingly arise. If another country/realm wished to do claims attachments, would they expect to be able to take that on in another committee or ASIG. ASIG is not planning to tackle other realms. That doesn't preclude the use of the materials by other committees. A friendly amendment to add the text "(in the US realm)" was accepted. Motion carried.

Questions were raised regarding the status of the Version 2.6 ballot. Version 2.6 did not go to ballot this cycle and the timing is an ongoing discussion. The intent of the committee is to bring Version 2.6 to ballot. The next planned general ballot cycle is in July.

5 Board Meeting

V3 - UML expression

The most significant issue for Australia at this meeting was the proposal from the NHS (United Kingdom) to investigate a UML-compatible expression of a standard v3 message. This will have several positive effects: v3 will be simpler to understand, a

v3 message will have smaller volume on the wire and v3 messages will be directly amenable to processing using standard UML tools. If this work is successful v3 should be significantly more attractive to Australian software developers.

Strategic Planning Initiative – Task Force

McGrew and Associates presented a draft strategic plan to the HL7 Board. It was also presented to the international affiliates and implementation planning workshops were conducted during the week. Of major interest to Australia is the proposal to proceed with the creation of a full-time, paid directorate to support the technical work of the volunteers. The first step is the recruitment of a fulltime CEO to be the global figurehead for the organisation supported by a Chief Technology Officer (CTO) and Chief Financial Officer (CFO) and, potentially, a Chief Operating Officer.

There are a range of initiatives to further globalise HL7 Inc with the move to establishment of a formal HL7 – USA which will sit alongside the other international affiliates. This meeting saw the disappearance of “international delegate” ribbons. The move to internationalisation has practical aspects, such as the recognition that the US will have realm specific terminologies eg ICD9-CM in the local standard applications of its messages and these have to be managed separate to the core standards. It is also important to recognise the historic and ongoing role of US based software companies and large US government institutions as major contributors in various ways to the organisation. In discussions of the strategic plan, Klaus Veil emphasised the need for HL7 to form a clearer view of its market segmentation, the needs of each segment and the importance of having strategies appropriate to each segment.

Appendix A below contains summary notes on material from presentations on the Strategic Planning Initiative.

6 EHR TC

Following reconciliation of negative ballots, the number of affirmatives has now risen to over 70% - the Committee level ballot of conformance criteria has therefore passed.

The Interoperability Model is currently at Version 0.4. This includes the resolution of public comments from January, 2006. There appears to be 70-80% fit with CDA at this time, and profiles may be developed for other containers.

Compilation and analysis of Industry Interoperability definitions has been completed. The White Paper was circulated 2-3 weeks ago, and comment is encouraged.

An environmental scan of PHR products on the market has been undertaken; a definition of the PHR was determined for the workgroup; Connecting for Health's PHR was used as the foundation for a PHR profile; 64 functions have now been reduced to 60; and a glossary has been developed - this is likely to move to the HL7 glossary.

A legal EHR profile will now be developed, probably against both the EHR Functional Model and the Interoperability Model.

A number of situations have been encountered which required clarification as to what constitutes substantive change. Current documents are framed for messaging, not something like the functional model. A document describing these situations was discussed with the ARB, which will continue to develop an overarching substantivity guide.

There was substantial discussion about the role of the TC is registering and/or certifying profiles, which may arise from a large array of sources. Key issues include the legal ramifications and whether certification is a line of business that HL7 wants to be in. This will be referred to the HL7 Board.

Emergency Care SIG

There are 2 areas of activity in the SIG. The SIG is attempting to design and Emergency Profile to harmonize with the functional model. This should be completed by the end of the year; and to revise DEEDS (Data Elements for Emergency Department Systems). DEEDS was developed in 1998 and needs to be updated to coordinate with the Functional Model, LOINC and SNOMED.

7 Patient Care TC

David Rowed did not stand for re-election and was replaced by Susan Matney, who is a clinical informatician with nursing background who trained at InterMountain Healthcare in Utah and now works for Siemens. David was one of the founders of this group and has been a strong advocate for the participation of those with a clinical background in HL7 to provide the technical clinical content as well as a focus on the need for systems which work for clinicians and patients. David (who is chair of IT14-6-6) has been the driver to extend the HL7 version 2 domain to support clinical messages such as referral and hospital discharge summaries. He has agreed to remain as the editor of Version 2 Standard Chapters 11 & 12 which cover messages on which we have based the AS 4700.7 or "REF" message" which is the basis of discharge summaries, referrals and infectious disease notifications.

The participants in the Patient Care group are primarily focused on developing clinical messages in Version 3 and CDA and in many countries the need for clinical messaging is really awaiting the development of clinical computing in general. Their needs are not immediate (except for UK, Canada and Netherlands). Australia had a need to implement clinical messages prior to v3 being regarded as sufficiently mature and there is wide experience and comfort with HL7v2 (despite its limitations), hence the extension of the v2 standard to incorporate a number of the newer functions being added to v3 to support clinical informatics.

Overall the Patient Care Committee is supportive of our efforts (and NZ also seems committed to v2 Chapter 11&12) but does not have the technical expertise or individual interest in supporting ongoing v2 maintenance and development. This reflects the reality that in all the areas of HL7 involved in clinical care of one form or another the almost entire HL7 workgroup focus is on the newer standards based on v3 and CDA. This is not to say that Version 2 is rapidly disappearing - reported experience is that v2 use is increasing (even in countries where v3 has been adopted as the standard). This reflects that, by and large, v2 is a very mature standard and

can be implemented in many areas (primarily seen as administrative) without much need for central change.

The clear onus on Australia and other countries is that if we wish to continue expanding v2 functionality then we have to provide the resources and effort to do so and to participate at HL7 to manage these changes through the standards ballot processes. While the potential for maintenance of the Ch 11 & 12 by HL7 staff was canvassed it was again made clear that Australia will need to continue to take responsibility.

Much of the activity of the committee in San Antonio was in discussing ballot comments (and in joint sessions reported elsewhere) . The core Care Provision domain model has passed ballot for adoption as a Draft Standard for Trial Use (DSTU) with a view to it going through a period of implementation before being declared as completed.

Canada presented their model for the i-EHR. In summary, Canada will be building a centralised model in which core components (medications, allergies, problems, key documents) will be used by health workers in real time as "a service" or component, interacting with other, local EHR components. So, in practice, a doctor will access the central record for common activities and use the local record for non-shared material. Consequently, information will be moving both as messages and structured documents (CDA) and sometimes both where messages are needed for processing and structured documents for human reading and storage.

It would seem that based on "the enter once use many times" principle this will only work if there is one central summary record component. This seems to be a radical departure from previous models for shared EHR and while a shared EHR is some way off in Australia at the National level, it will be interesting to follow Canada's progress.

The Canadian model proposes to carry CDA documents within HL7 v3 messages.. This will allow (as we have with pathology messages in v2) a human readable document, along with structured data within the message. This caused some debate on the fundamental question facing HL7 over whether the CDA document or the version 3 message is the most appropriate place for structured data, noting that, sending data in two ways is potentially redundant and may result in inconsistent data.

8 Community Based Health Services (CBHS) SIG

Upgrades to the v2 REF messages

The Community-Based Health Special Interest Group (CBHS) discussed the Australian proposals for new Collaborative Care messages (CCM) as replacements for the v2 REF message. With the possible exception of New Zealand, no jurisdiction outside of Australia has plans to use v2 for referrals or discharge. Therefore no other jurisdiction has resources to assist Australia to make any extensions to the published REF message or to create our new CCM messages. There is no objection to

our progressing our own agenda here and we have the goodwill of all parties, but we can expect little practical assistance.

These other jurisdictions have no immediate plans to implement messages in support of Referrals and Discharges, and are likely to use either CDA or v3 Patient Care messages for this purpose.

Community mental health

Richard Thoreson joined the SIG to push forward some projects related to community mental health and was elected as co-chair. Richard works for the US Government's Substance Abuse and Mental Health Services Administration.

9 Conformance

Discussions on conformance included:

HL7 v2.7 finalisation of field length

It was decided to leave the field length blank in the standard apart from a few exceptions. Minimum and maximum field lengths will be defined in an implementation profile. It was also decided to use the conformance profile to define the field lengths. These changes are to be made to chapter 2B. This results in doing away with maximum length in standard and specifies minimum length as normative. This covers about 95% of field lengths.

HL7 v3 ballot reconciliation

Approximately 190 ballot comments were received in the last ballot, and have been graded according to the comment.

v2 conformance tools

This involved demonstration and discussion about Message Workbench and Message Maker. Message Maker is now at version 1.5 and can support HL7 v2.3, 2.3.1, 2.4 & 2.5. Future versions will be able to support functional testing, improved validation, ER7 to XML & reverse, sending / receiving messages and web service message validation.

Message Workbench is now at release 6.5. One of the newer facilities is to act as a pass through port, which is used like a sniffer, to detect messages, then pass on to a known end point. Then it can then receive the Acknowledgement message back from the final destination. This gives a complete end to end message testing process. It is highly likely that this service can be incorporated into AHML by linking Message Workbench to the AHML message test engine. Another new feature is to constrain tables to suit specific profiles, save to a table library, then import this library into a new profile.

10 Structured Documents TC (and CDA: Clinical Document Architecture)

As a general observation, the CDA approach appears to be gaining increased traction. In the US, this is increasingly being driven by the need for a mandatory Continuity of Care Record (CCR) whenever a patient is transferred between providers and by requirements for electronic claims attachments. CDA documents are also emerging as part of national approaches to shared EHR in France, Germany, Japan, Korea and Finland. Although the recently-approved CDAr2 is designed to offer an "incremental" pathway from relatively unstructured information interchange through to higher levels of semantic interoperability, current usage appears to be limited to the exchange of relatively unstructured information (similar to CDA R1).

Work of the Structured Documents TC, which has overall responsibility for work on Clinical Document Architecture (CDA) was spread between ballot reconciliation, review of comments on drafts and consideration of presentations on potential joint activities and questions of technical policy, with the following being some of the highlights:

- Dr Jim Campbell (SAGE - University of Nebraska) provided an update on work which has been proceeding since early 2004 to use CDA as standard means of sharing order set content and discussed the implications of representing care planning guidelines, protocols and order sets as CDA documents. Noted:
 - A separate domain model (DMIM) has been developed for acquisition and modelling of clinical knowledge and order sets from the Structured Document architecture and the Clinical Statement Act model – this is now believed to be fully RIM-compliant
 - Data type mapping begun and discussed; XML architecture, schema, style sheets derived – beginning with RIM toolkits; six 'exemplar' order sets collected for trial implementation;
 - Questions about relationship of order sets to the HL7 RIM – noting the need to track changes to guidelines as they are refined by individual institutions, and their application to establish actionable items for specific patients.
 - Is there a need for a more generic domain model for acquisition and modelling of clinical knowledge and for the development of a KDA (knowledge document architecture)
 - Responses to a comment that templates (or archetypes) are designed as a means of representing clinical knowledge. He queried whether such approaches are yet accepted within HL7? And, if so, how long before they will be implementable in a way that complies with the RIM?
- At a joint meeting hosted by the Attachments SIG Dr Bob Dolin and Georgina Kurtovich from Kaiser Permanente (KP) presented their findings from reconciling LOINC clinical codes (as required for HIPAA/HITSP-conformant clinical claims attachments) and SNOMED coding used by KP for clinical reporting. The major issues appear to be:
 - The required LOINC codes are overly prescriptive in some of the detail they require and the requirement for such detail (e.g. method of calculating

- ventricular ejection fraction) appears to be driven by the choice of code set, rather than by the needs of claims assessors
- Because the LOINC codes require information not normally recorded as part of producing clinical summaries, they cannot be automatically generated from SNOMED-coded clinical notes without additional manual intervention
 - The implications are a need for more specific pre-coordinated SNOMED codes, at least matching the specificity of LOINC clinical codes or (preferably) less prescriptive attachments requirements
 - Some heat, given that these issues have not previously been raised in over 9 years of work on electronic claims attachments – exemplifying a common theme that cross pollination of expertise needs to be actively managed in HL7 and not left to random events.
- Current status of CCD. The TC discussed the CCD specification for representing the Continuity of Care Record CCR in CDA. Much of the CCD documentation is understood to be ready but considerable work is needed before it can go to ballot. The following points were noted:
 - The earlier CDA/CRS (Care Record Summary) which was balloted as a draft standard continues to be adopted, despite its instability and shortcomings. The longer that it takes for CCD to be finished, the harder the migration issues will become.
 - Following considerable debate over the level of detail and compatibility it was resolved to have a CCD specification ready for the next ballot cycle, to include as much of the CCR as is reasonably possible (but no more than is required for CCR) and all content needed to fully replace the CRS.
 - Pharmacy is proving difficult. Family history was not well covered by RIM – resulting representation is sparse and is subject of ongoing debate.
 - The CCD basically delivers material that we in Australia currently send in v2 REF messages and would therefore be a logical starting point for any move to v3 for discharge summary and referral.
 - A report on progress in mapping diagnostic imaging reports produced in DICOM SR (Structured Report) format into CDAR2 documents was discussed. This work is becoming increasingly important as more devices (endoscopes, ultrasound etc) provide integrated clinical reporting. The work addresses the capture and representation of both context (including clinician authorisation) and clinical reporting content. Collaborations include DICOM WG10 and WG6 as the mapping will need to be maintained in line with enhancements to the DICOM standards and avoids HL7 developing new standards in direct competition with DICOM. This work may provide some useful pointers for any Australian initiative using CDAR2 for reporting diagnostics.
 - Gary Dickinson gave an update on the interoperability profile work that he is doing in the EHR TC (discussed elsewhere).
 - A use case is being developed to test the ability of CDA and the RIM to handle the different types of clinical problems evidence-based guideline has been developed for rash evaluation that includes an initial evaluation by a primary care clinician and a referral to a dermatology

- The potential of mapping the ADA1000 model used to capture dental reports to CDAR2 was discussed. It was noted that this would be a major undertaking of greater magnitude than mapping the CCR; however, some of the work on mapping the ASTM E31 EHR model to CDA for CCD could simplify the task, as the ADA seemed to have built their model on the ASTM model.

Dr Peter MacIsaac attended a CDA/CCD workshop which provided an overview and took participants through the process of creating an XML document in the proposed CCD format.

11 Templates SIG

Meetings this week have again highlighted progress in the understanding of the use and requirements of templates. Engagement with other committees who consider themselves customers of templating technology has refocused activity to achieve practical benefit for existing message implementers and clarify usage for current standards development.

There was also considerable focus on the relationship between domain analysis modelling and semantically complete HL7 v3 modelling. This addressed tooling initiatives to support formal definition creation and consequent alternative IT specifications that would become possible. This proposed methodology also led to an approach on addressing existing openEHR clinical archetypes, and NeHTA clinical information group models.

11.1 Templates / SOA: Resource Locator Update Service

A joint meeting between the Templates SIG and the Services Oriented Architecture SIG defined specific uses of templates to support service level agreement definition, to be used in conjunction with the Resource Location and Update Service (RLUS). The RLUS goes beyond the IHE implementation of document sharing (XDS) to include the use of semantic definitions (models and templates). This allows information instantiating domain specific semantics to be conveyed over the service as a payload independently of the functional information required for the service to operate. In particular the services work has highlighted the need to employ explicit or referenced definitions of the structure and semantics of information in relation to the resources being accessed through the RLUS service or 'Semantic Signifiers'. The uses of semantic signifiers were enumerated as follows:

- 1) *Define query or parameter statements for resource location.*
- 2) *Define the type of information accessible from resources.*
- 3) *Define the response information to be supplied on resource request.*

The Templates SIG will:

- 1) *Define traits that identify templates – making them discoverable.*
- 2) *Recommend a suitable representation format for templates to include as an example HL7 v3 profile.*

11.2 Templates/Tooling

Templates SIG entertained a tooling proposal presentation from Grahame Grieve (jivamedical.com) in conjunction with discussion with NHS (UK). This approach addressed the transition from domain analysis models to HL7 v3 models/templates for implementation of systems. The following definitions are made:

- 1) *DAM (Domain Analysis Models) contain the specific semantics of particular domain in question in terms of the domain experts understanding of information in the context of the specific domain. Generally a UML model.*
- 2) *The HL7 v3 RIM (Reference Information Model) contains cross-domain semantics that are commonly employed in health care information systems.*
- 3) *HL7 DIM (Domain Information Models) contain more specific domain semantics that are employed in health care information systems in particular domains.*
- 4) *HL7 CIM (Constrained Information Models) can define particular semantics supporting a message, or reusable pattern of information.*

The following assertion is made:

To support a level of semantic interoperability as defined at the RIM, DIM or CIM level information must be represented in both domains. That is, implicit information in a domain analysis model must be completely expressed to be interoperable within the reuse domains of the RIM, DIM or CIM.

The HL7 modelling methodology ensures that this occurs within the HL7 v3 space; it is not guaranteed that direct domain analysis modelling will address this.

By asserting this, a method of formally mapping domain analysis models to HL7 model artefacts allows the definition of a domain model that conforms to the HL7 RIM semantics in a guaranteed way. This requires forward mapping of the DAM semantics into HL7 v3 models and ensuring HL7 v3 model semantics are also defined completely in a 'reverse' mapping exercise. This ensures that the mapping definition will contain explicit domain information mapping to HL7 v3 and also implicit information required for v3.

The benefits are as follows:

- Formal mapping of semantics can be stated including implicit information unstated in DAM
- Guarantee of HL7 v3 semantics (RIM, DIM or CIM level - that is interoperability at that level)
- Tooling can support an implementation that allows information to be used in terms of a domain based model.
- Tooling can create v3 XML serialization in terms of chosen HL7 information model.

Pursuant to the above modelling approach and addressing CEN13606 requirements in Europe, Templates SIG will consider the following as a way forward:

- 1) *Existing openEHR, NeHTA clinical information models or other domain models are used as domain analysis models as described above.*
- 2) *HL7 v3 semantically complete models can be produced to support these constructs and can thus support HL7 v3 interoperation.*

Also to be considered is the implementation of HL7 v3 RIM, DIM, CIM as a set of CEN Archetypes, which can be known as "HL7 Archetypes". The domain analysis model approach above would then be supporting specialization of HL7 v3 Archetypes and complete constraint modelling. This approach also allows for support for CEN 13606 standards or a HL7 v3 – CEN 13606 standard. To ensure this is possible two approaches to datatypes can be taken:

- 1) *Harmonisation between CEN-13606 and HL7 v3 datatypes takes place*
- 2) *CEN 13606 Archetypes are created to support HL7 v3 datatypes*

This will be pursued in conjunction with participants from CEN and openEHR.

12 Healthcare Services Specification Project (HSSP) and SOA SIG

Detailed work on the joint HL7/OMG Health Services Specifications Project (HSSP) was progressed through the Services Oriented Architecture (SOA) SIG, with Ken Rubin being re-elected as co-chair. Policy issues considered in some depth in San Antonio included how the HSSP work relates to

- (a) HL7v3 message content, and
- (b) the activities of IHE (Integrating the Healthcare Enterprise) in defining profiles for services,

In progressing the work of the HSSP, HL7 is providing the lead on preparing Service Functional Models (SFMs) that define service requirements, with these flowing into OMG processes that establish technical solutions via Requests for Proposals seeking "vendor submissions". In theory, this is building on the strengths of both organisations – with both OMG and HL7 operatives being fully involved across the entire process.

The process is still moving through the requirements specification stage with some considerable way to go before finally agreed specifications emerge; however, at least one significant consortium is understood to have been formed to become a "submitter" as soon as an RFP is released.

The work is proceeding in five streams:

- Service Development Framework (SDF), which is now Ken Rubin's main personal interest in the project. This stream is working on processes that support the joint development of SOA for the e-health arena with a view to having authoritative, repeatable, documented processes, supported by infrastructure that allows the project to execute with an engineering discipline. Outputs include documentation of processes, methodology and boilerplate for services specifications.
- Retrieve Locate and Update Service (RLUS), which has some input from IHE's XDS, was submitted to initial HL7 (committee) ballot in March 2006 and will be resubmitted for full membership ballot in July, seeking final acceptance by September. It has been suggested that further input from informed Australian interests would be valuable.

- Entity Identification Services (EIS). This service has wide application for both patient identification and identification of care providers (both as persons and as individuals) across healthcare systems. It is scheduled for its first (committee) ballot in July – with comments to be reconciled at the September Working Group. Foundation concepts were drawn from the OMG Person Identification Service (PIDS) specification and the IHE PIX/PDQ profiles. It has been suggested that further input from informed Australian interests would be valuable – particularly as regards strengthening the use cases surrounding shared identification services.
- Decision Support Service (DSS). The SFM for DSS is being progressed as a joint project between HL7 CDS (Clinical Decision Support) TC and HSSP with a view to being issued as a committee ballot in July.
- Common Terminology Service (CTS2). This is a joint project between the HL7 Vocabulary TC and HSSP which is defining the core behaviour for managing and maintaining terminologies and vocabularies.

The relationship between SOA and HL7 v3 messaging was examined at the Infrastructure and Messaging (INM) TC in San Antonio, which found that:

- SOA represents a paradigm shift from the traditional v3 messaging approach; therefore, SOA SIG should develop solutions within the SOA paradigm without necessarily using existing v3 message constructs
- Current message wrapper attributes provide requirements to be addressed in development of SOA solutions
- Messaging could rely more on service policies with a corresponding reduction in message attributes for establishing service characteristics.

It was also noted that, after some early friction, an agreement has been reached on involvement of IHE in HSSP activities.

13 Pathology

Resolution of v3 Ballot Comments

There was almost no discussion of v2 Pathology at this WGM. The major emphasis was on the resolution of v3 Ballot comments. This is usually tedious work but it is the major modality for quality improvement in any consensus standards development process. Because of the large amount of work to be done in response to the current round of ballots, including ballot comments from Australia, Pathology will probably not be balloted at the next Ballot cycle.

IHE Pathology Initiative

The initial IHE Pathology profiles were developed by the French back in 2002 and used HL7 v2. At this WGM the French showed a draft document "Sharing Clinical Laboratory Reports" which specifies how to format Pathology reports as CDA documents - with a single CDA document providing both machine-readable content

and content with markup suitable for human-readable display. This will open for worldwide ballot in June or July 2006.

14 Imaging Integration

Canada Health Infoway presented a project for acceptance and approval. This project is looking at public health diagnostic imaging, particularly with tuberculosis diagnostic imaging, using v3 messaging.

15 Public Health and Emergency Report

The California Department of Public Health presented on their v3 message used for notification of disease status. This message is sent from local to state health departments. They also have a similar message for outbreak notification.

Ed Hammond, Duke University, presented on emergency response messaging needs. He has approached HL7.org for assistance in developing the appropriate v3 messaging for emergency situations. This has arisen from the aftermath of hurricane Katrina. The following is a list of issues that were discussed.

- Preparation in advance
- Data cannot be distributed at source sites but must be available in a centralized location and backed up
- Data must be patient specific
- What is required?
 - Create a real time data base that contains critical data necessary to support residents before, during and after disaster
 - Provide reporting, analysis and query capabilities to make effective use for first responders and disaster recovery
- Possible content
 - Demographics
 - Health status indicator
 - Medical problems
 - Medication lists by patient
 - Allergies
 - Support requirements
 - Indication of required help if evacuation is necessary.
 - o No means of transportation
 - o Disability
- Reports and Queries
 - Inventory of requirements
 - Details of evacuation routes
 - Requirements at destination
 - Priority for response and treatment

16 Clinical Decision Support

While no-one from the Australian delegation was able to attend the Clinical Decision Support sessions, the ballot for the "INFO Button" is noteworthy.

"An infobutton is a point-of-care information retrieval application that automatically generates and sends queries to electronic health information resources (e-resources) using patient data extracted from the electronic medical record and context information that is captured from the interaction between a clinical user and a clinical information system (e.g., user characteristics, patient demographics, task being performed by the user)" - HL7 v3 ballot material.

This approach seems to support the use of information services which can be linked to the EHR in a standard way. This approach seems consistent with the thinking from the HL7 Australia Clinical Decision support working group who proposed the creation of a standard schema for drug information resource. Further information is available at:

<http://www.hl7.org/v3ballot/html/infrastructure/infobutton/infobutton.pdf>.

17 Vocabulary and Terminology

The work of the Vocabulary TC group is largely divided into two areas:

- (a) managing the HL7 internal vocabularies (which both support the RIM and also are used as value sets in HL7 messages, where external vocabularies are not available). This includes the work on the Common Terminology Service (CTS) as a means of managing the HL7 vocabularies.
- (b) Considering how terminologies such as SNOMED and LOINC are to be incorporated into Version 3 structures. This work links and overlaps with the SNOMED working groups.

The first group of activities is not of general interest, but vital to the HL7 infrastructure as v3 in particular is heavily dependent upon the use of vocabulary to allow the extension of its models.

The second group of activities, known as the TermInfo Project, is of particular interest to those who are involved in the development and deployment of advanced terminology functions such as the use of terminology in v3 messages, creating compositional or post coordinated expressions and inferencing using coded and structured data.

The first draft of the TermInfo report was put out for ballot and received many comments. Many comments related to the style and need for more explanation and details. These comments have been taken on board by the authors. Technical comments have been discussed and will be represented in the next version of the paper.

A range of technical issues were deferred to the SNOMED Context of Care Working Group. It is clear that considerable interchange is required between the HL7 Vocabulary Group (including TermInfo and CTS) and the SNOMED working groups.

Australian participation in these groups should be discussed between Standards Australia, HL7 Australia, DoHA and NEHTA and considered as part of the standards workplan.

A tutorial was conducted about the issues that arise when a Terminology (eg SNOMED CT) is implemented within an Information Model (eg HL7 Version 3). Sometimes more precise semantics emerge when a particular semantic concept is expressed in the model, rather than coding the same concept in the terminology; but sometimes it is preferable to do the opposite.

This is not a particular problem of either SNOMED or HL7. Similar problems will occur with any combination of Terminology and Information Model.

18 V3 Dynamic Model

There has recently been a steady stream of criticism about aspects of the v3 Dynamic Model particularly regarding Receiver Responsibilities. Much of this criticism has originated from Australia over several years. In response to this, a group met to discuss ways of improving the Dynamic Model. This is still a work in progress, but early indications are positive. The overly-simplistic, but difficult-to-understand Receiver Responsibilities are likely to be replaced by UML activity diagrams. This seems to offer greater ease of comprehension with considerably increased functionality.

19 Publishing and Process Improvement Committees

Despite a lack of resources at this committee there is a steady stream of improvements to both the content and the presentation of the v3 ballot material. Further improvements were agreed at this WGM. A spreadsheet of Publishing tasks is to be completed before the next ballot cycle has been developed and these tasks will be worked on in the coming weeks

The PIC has undertaken to improve aspects of the balloting process, particularly when the ballot item spans several HL7 domains. R Harding has a particular interest in these matters and is contributing to the ongoing work in this area.

Appendix – Key Points from Strategic Initiative

The HL7 strategic initiative commenced in 2005 with the view of improving the efficiency of the standards development process, funded by a grant from the Robert Wood Johnson (RWJ) Foundation. The overall goals are to:

- Restructure the organization to address longer-term goals
- Support HL7's role at the international and affiliate level
- More efficiently and expeditiously develop standards

A Strategic Initiative Task Force (SITF) led by consultants Cherri McGrew and Associates has been considering these issues via teams focussed on the following four key themes:

- New business model and organizational structure
- Internationalization
- Product and Services Strategy
- Optimizing Volunteers and Resources

The strategic initiatives approved by the HL7 Board in March 2006 as the basis for on-going implementation planning are as follows:

- HL7 will implement a new business model and organizational structure
- HL7's Board will formally approve a product and services strategy that is reviewed annually
- HL7 will optimize the effectiveness of its volunteers and other resources
- HL7 will develop a brand hierarchy that helps the marketplace understand the relationship of its products to each other and to the overall organization
- HL7 will develop consistent organizational messages and a communications strategy to disseminate those messages
- HL7 will implement a product-oriented project management approach to ensure development of high-quality standards and associated products in a committed timeframe
- All standards will undergo quality testing at key stages of the development process

At the San Antonio meeting, further work on implementation planning was presented and reviewed with the opportunity for input from International Affiliates and SITF for presentation to the Board – this included more detailed thinking around some of the harder issues facing HL7 (particularly the revenue base, image issues for a more global organisation and implications of forming a US affiliate). The following points were put forward as the basis of implementing the strategy:

- **Implement a new business model and organisational structure**
 - Position as an international Standards Development Organisation (SDO) less reliant on volunteers to promote its existence and viability

- Continue to address national initiatives of importance to affiliates - particularly the US
- More effective organisational structure – including a CEO CTO and technical directorate
- Enhance Web presence and tooling
- These activities require a significant infusion of revenue
- **Product and Services Strategy**
 - Needs to be coherent and maintained at Board-level
 - Must accommodate needs of both HL7 members and industry leaders
 - Is essential foundation for product positioning, branding and relationships with key stakeholder groups
 - Must support HL7 strategy of having all HL7 standards adopted internationally through ISO
 - Must facilitate timely delivery of standards (by refining focus of work)
 - Must embrace HL7's role as an expert health information architecture group – supporting work in messaging, document exchange and services
 - Will define HL7 relationship with other SDOs and certifiers
- **Optimise volunteer and other resources**
 - HL7 volunteer culture is fundamental
 - HL7 is taxing the Limits of volunteerism by current approaches
 - Enhance the contributions of our volunteers
 - New volunteers from untapped sectors
 - Tooling to allow volunteers to focus on standards
 - Increased staffing support
- **Brand hierarchy, consistent organisational messages, and communications strategies**
 - Identify core products and develop a branding hierarchy – helping the market to differentiate products and better relate to HL7
 - Communications to industry is imperative
 - Three key activities for immediate action
 - Redesign website to enhance Web presence
 - Branding of HL7 (and products)
 - Outreach to key constituents
- **Product oriented project management and quality testing**
 - Improving the ability to produce high-quality standards and associated products
 - Supporting successful end-user implementation in a shorter timeframe
 - Well-defined product management approach

- Quality control is an inherent component of product lifecycle management
- Mechanism for continuous improvement of lifecycle process

The overall objective is for a transition to a technically enhanced global organisation within three years, commencing with recruitment of the suitable CEO to lead a global standards organisation. Resulting from the deliberations of the SITF, the following implementation proposals were developed for presentation to the Board:

	0-6 Months	6-12 Months	12-18 Months	Goals & Objectives
Products & Services	- Products & services roadmap	- Annual products & services strategy - Implementation guides		Create & implement an annual products & services strategy
Productivity & QC	- Establish product lifecycle task force - Establish Technical Directorate (volunteer) - Establish project criteria - Review TC/SIG work	- All new projects must comply with new criteria - Transition existing products to new process - Educate members on use of project model - Refine CTO/TD roles	Hire CTO	Produce higher quality standards to meet user needs in a timely manner
Business model & org structure	- Hire interim leadership - Hire transition consulting resources - Develop the proforma (with funding plan) - Develop transition plan - Basic approval of financial model - Board to define roles & responsibilities (CEO)	- Begin search for new permanent CEO - Hire a CEO		Create an infrastructure to support improved standards development processes
Volunteer & other resources		- Determine types of "volunteers" + skills, motivation, job-match - Develop training programs	Create leadership training program	Support and enhance the contributions of our volunteers
Communication & branding	- Define the brand - Develop market segmentation matrix - Website redesign	- Tailor messages - Launch the website - Draft white paper - Create presentation and speaker list		Improve internal communications and help the marketplace differentiate HL7 and its products
General	- Explore overarching role in health standards			
Funding for:	Leadership Implement'n consultancy Web firm	25% market expert		

Following consideration by the Board, it was reported that:

- Certain key concepts had been adopted as being of benefit to the organisation, both now and in the future
- A commitment has been made to initiate the search for executive leadership
- Implementation planning and transition strategy document to be revisited
- Imperative that the funding model reaches level of specificity that provides confidence that plan is achievable
- Focus of Board retreat in August will be finalizing implementation strategy and transition plan.