

Welcome once more to the HL7 UK eZine. Whilst we're sorry that there has been a gap in production, the reasons for this are not too bad, for example some of the effort that had been going into eZine writing has instead gone into writing HL7 based course materials that are already being used in health informatics related courses in several UK universities.

Our highlights this time are the HL7 UK 2010 Conference and several reports on international HL7 activities that are relevant to the UK.

HL7 UK 2010 Conference

The HL7 UK 2010 conference 'Healthcare Connections – the next decade' is to be held on the 3rd and 4th March at the Royal College of Obstetricians and Gynaecologists. This year's Conference has been kindly sponsored by InterSystems and is open to HL7 UK members and non-members. The scope of the event will include multiple dimensions of healthcare interoperability.

2010 is the 10th anniversary of HL7 UK and the conference will also be hosting an anniversary party at London Zoo, Regents Park on the evening of the 3rd March. We hope all delegates registering for the Conference will come and join in the celebrations – and at only £20 per head, it promises to be an evening to remember.

Programme Committee Chair Rik Smithies is inviting the submission of abstracts for a short paper to be presented at the conference. You are welcome to propose papers on any subject associated with the use of HL7 standards or broader issues of healthcare information interoperability, but especially those along the following themes:

- Role of standards and interoperability



Royal College of Obstetricians and Gynaecologists' main entrance

- in clinical research: what has been done? what needs to be done?
- Practical experiences of implementing HL7 standards (V3 messaging, CDA, V2)
- Testing and conformance - of applications, implementations and/or specifications
- Clinical information models - representation of clinical information, terminology, logical and detailed models
- Use of wider/complementary standards and profiles: SOA, XML, DICOM, IHE and XDS, NHS data standards
- Personal health records: commercial and international programme experiences
- Integration between NHS and independent sector providers

Since 2010 is the 10th anniversary of HL7 UK we are also interested in papers that review the last few years, and that look forward to the next few. As attendance at the last Conference was high, we advise that you book early to avoid disappointment. Preference will be

given to HL7 UK Members and discounted rates are available for the NHS.

To contact Rik and for further details and registration please go to <http://www.hl7.org.uk/hl7ukconferences/ite/2010.asp>.

A Note from Our Chair...

By Charlie Bishop

Welcome to the latest edition of the HL7 UK eZine. 2009 has seen a lot of activity and progress both here in the UK and on a global scale.

Three very successful roadshows at the start of the year, the regular three international WGMs in January, May and September and an increasingly active Technical Committee providing support for the NHS Interoperability Toolkit (ITK) initiative. These are just some examples of how we continue to engage in the world of healthcare communication standards.



The roadshows, in Leeds, Birmingham and London, were attended by around 200 people. They had a full day of case-study presentations, tutorials and a panel Q&A session. Feedback has been very good and this is borne out by a number of new personal and organisational members taking our total membership to just over 200. Once again, I would like to express our sincere thanks to our sponsors whose support made these events possible and everyone else (too numerous to mention individually) who contributed to making these events so successful.

Our Annual General Meeting, back in April, saw a couple of changes in our management board. I took over the responsibility of being the HL7 UK chair from Rik Smithies. Continuing this column's theme of thanking everyone, I believe Rik deserves a very big Thank You from us all. He took on the mantle of being Chair at short notice, without the benefit of being Chair-elect for a year, when our previous chair unexpectedly stepped down and has done an excellent job leading the organisation and representing us within the international community – he is a hard act for me to follow. Ann Wrightson is our new Technical Committee chair, taking over from Hugh Glover who also deserves our thanks for a sterling job running the TC for a number of years.

The Kyoto Working Group Meeting in May was HL7's first WGM in Asia. Although attendance was slightly lower than previous meetings, most attendees that I have spoken with see it as one of the most successful. The view seems to be that the lower numbers resulted in an increased focus on the key issues and this allowed positive progress to be made on them. While the primary focus of WGMs is ongoing development of the HL7 family of standards, they do provide

other opportunities. Throughout the week there is also a comprehensive tutorial programme, information sessions and the opportunity to meet experts in HL7 and other related areas from around the world. Advance registration for the January meeting in Phoenix will be available via the HL7 web site until 28th December.

In September, a number of initiatives were announced to reflect the truly international nature of the HL7 Organisation:

- HL7 is changing its name from HL7 inc to HL7 International
- The Affiliates Council has been renamed as the International Council with an official representative from the US
- HL7 is actively investigating the establishment of a European office - probably in Brussels. If successful, it is likely to be followed by others around the world

While there is clearly much work still to be done to resolve all of the issues arising from becoming a truly international organisation, these are very positive steps and can only bode well for the future.

Looking ahead to next year, planning is now well advanced for next HL7 UK conference on March 3rd and 4th. We are returning to the Royal College of Obstetricians and Gynaecologists, the venue that hosted our successful conference in 2008. This conference marks the 10th anniversary of the establishment of HL7 UK, so make sure that you put these dates in your diary so you can help celebrate our 10th birthday and make it an occasion to remember.

From the HL7 International TSC Chair – Consistently Improving

By Charlie McCay

The strength of HL7 is that it can deliver specifications that people need using an open process with quality review. I want people to sigh



with relief when they hear that a project that they are involved with is using HL7 standards. While this does happen, it is not yet a universal reaction. It is one that we can and must get to.

So, what can we improve? This article looks at the work to drive consistency between the various HL7v3 product types: CDA Implementation Guides, Messaging, Services, Decision Support Virtual Models.

HL7 does have a number of specifications with duplicate or inconsistent content and this is a tension that HL7 has been feeling for many years as our scope and level of activity increases. We are constantly working to do a better job of delivering consistency, but we must keep our eyes firmly on delivering those useful specifications in a timely fashion. The TSC has looked for strategies that allow for consistency to be introduced in an incremental way.

The current TSC visibility initiatives help to address this - the open distribution of project scope statements mean that HL7 projects and committees have discovered that there are projects happening elsewhere in HL7 that they want/need to work with. The more consistent we are in posting minutes and project updates the easier it will be to work such issues through and deliver better specifications as a result.

Getting tools for maintaining CDA IGs and associated templates in a form that is directly comparable (with tooling assistance) to the RMIMs developed by domain committees will also help drive up the quality of the CDA IGs and domain models but making it easier to compare work -- it will make it easier to maintain consistency, while allowing for difference when there is good reason.

The work of the ArB and Foundations and Technology Steering Group Committees to establish and implement an Architectural Framework for HL7 products will help to support convergence and consistency going forwards.

Collecting and sharing information about intended and actual uptake and successes of various HL7 products will also help to establish which existing HL7 product are working, and which are not. This will help us to see where there is further work to be done, and where maintaining consistency adds real value. It will also help implementers to know whether they are early adopters, or using a widely adopted specification.

Creating and promoting a clear product roadmap will help users to navigate the wealth of material that is available from hl7. It will also help new projects see which are the products that they need to aim to be consistent with.

Delivering all these changes in the framework of the organizational Roadmap will let internal and external stakeholders see the overall direction of the organisation, and how each of the individual initiatives within the working group contribute to that.

All this is being done to ensure that HL7 delivers standards that are of the maximum value to all the projects that use them. There is much to be done, many mistakes will be made, and many excellent and useful specifications will

be delivered. The TSC is always open to ideas as to how to avoid mistakes, and how to increase the benefits that HL7 delivers.

The HL7 WGM, Atlanta 2009: a Personal View

By Robert Worden

This view addresses two overlapping topics: HL7's response to the Obama ARRA/HITECH initiative, and the role of mappings in delivering interoperability.



When we go to our GP in the UK, we naturally expect that he or she will consult our notes on a PC – and it will work; the GP will spend the time attending to us, not struggling with the PC, or re-booting the system. The same, apparently, is not the case in the US (and was the subject of some complacency and stirring by UK representatives!). A large part of the HITECH initiative is a massive bribe (‘incentive?’) of more than \$20Bn to US providers, to make it happen – so-called ‘meaningful use’ of healthcare records. This sum has not gone un-noticed by HL7 or the US Healthcare Industry, and was a major focus at the meeting - both formally and informally.

While ARRA/HITECH is on the face of it a US Realm HL7 issue, the major suppliers are naturally falling over themselves to deliver it. The timescales for the political objectives are very ‘aggressive’ (heard that one before?), with major milestones as early as 2011. What the major US suppliers do today affects UK Healthcare tomorrow. So no further apologies for describing a US realm topic.

In the plenary sessions, ARRA/HITECH

was addressed by John Tooker, CEO of the American College of Physicians, by Chuck Jaffe of HL7, and by David Blumenthal, newly-appointed National Coordinator for Health IT – the man who controls the money. While by tradition, little that is new gets said in plenary sessions, it was confirmed that HL7 has already won some important battles. The central record format chosen for meaningful use is HL7's CDA/CCD, not the rival ASTM CCR. Other, unsurprising, winners in this contest are HL7 V2.5.1 (many topics), LOINC (lab) SNOMED CT (lab, public health), NCPDP Script (admin, prescriptions), and HIPAA X12 (admin, money).

The aggressive timescales put the spotlight on two questions which were my own focus at the meeting, and which form the rest of this note:

- Is CDA ready for prime time?
- Interoperability: how will the systems interoperate between the alphabet soup of message formats (both winners and losers)?

In recent years, CDA Release 2 is the part of HL7 V3 which has got most traction in the market – perhaps because it is superficially easier to understand and implement than the domain RMIMs, which are collectively much more complex. I heard questions buzzing around CDA at the meeting, broadly of three kinds:

1. Tooling: How should HL7 publish CDA and support implementors?
2. Template Hell: This was one supplier's description to me of the plethora of parties defining templates (HL7, IHE, HITSP..) in different notations (Schematron, OCR, ADL) and in different places (wikis, profiles,...); and the difficulty of pulling it all together in an implementation.
3. CDA and the Domain Experts: Who

in HL7 should define the content of specific sections of a CDA? For instance, should it be the Structured Docs WG, or a domain experts' WG such as Pharmacy or Lab?

The tooling topic was the subject of a well-attended evening 'Birds of a Feather' session, showing relevant tools. Key exhibits were the NHS Static Model Designer, shown by Ravi Natarajan, and a CDA UML toolset from VA and IBM, shown by Dave Carlson and John Timm. These focussed around the areas of designing CDAs and templates, and of implementing CDA-centric applications in UML/Java. Willem Goossen described the work on Detailed Clinical Models (another form of template?). I described the Charteris mapping tools for interworking between CDA and other message formats – showing mappings and round-trip transformations between CCD and ASTM CCR. This got keen interest from the suppliers who have to work with both CCD and CCR, and less keen interest from some HL7 folk who felt that CCR was yesterday's problem – or should be.

These tools are implemented on Eclipse/EMF – perhaps a sign of where the tooling is going – and there was strong interest in establishing that they can all work together. A pilot project was mooted to evaluate the tools and their interworking.

Throughout the meeting, various approaches were discussed for addressing the 'Template Hell' problem – none of them convincing on their own, in my view. Mark Shafarman has been leading work to define business requirements for a Templates Repository (a necessary move, but when will it be built?); the VA/IBM team said 'do it all in UML/OCL'; and several people are building template mini-repositories. I saw no clear way forward emerging. Expect this issue to run and run.

I attended some sessions of the Pharmacy WG, mainly to help them make some mappings between their widely used V2.5.1 pharmacy messages and their newer V3 RMIMs. We made a good start, mapping with the tools and running a 'Hello World' V2-V3 message transformation. Attending their sessions also gave me a view of the 'CDA and domain experts' issue. They looked at the Medications section in CCD and asked 'Who wrote this? Certainly not us.' Fortunately John Hatem of Oracle had been tracking CDA/CCD, and was able to confirm that the CCD medications section was (if not exactly, then certainly very close to) a constrained subset of the Pharmacy WG's RMIM. But they resolved to have a strong input into future CDA Medications work, such as CDA R3, and this general view (domain experts lead) seems to be prevailing. This is clearly the correct choice in principle; the trick will be to make it happen.

And so on to interoperability, and the plethora of standards chosen for ARRA/HITECH. HL7 spends a lot of effort defining its semantic model for healthcare, and in publishing that model; but less effort in helping developers implement it. The Implementation and Conformance Working Group was lamentably ill-attended.

I went to the WGM to promote the 'mapping message': that if HL7 wants suppliers to work with its standards, they won't just migrate to the new model, because they have massive commitments to other models and systems. Suppliers need mappings between HL7 models and other models, and HL7 would do well to publish those mappings as a shared resource for the community – starting with V2-V3 mappings, to show how its own standards fit together. This message gets

a very good reception from suppliers, and a good reception in HL7 – but with notable exceptions, everyone is too busy doing other stuff to do anything about it. This is understandable, as most HL7 members are doubling their HL7 work with a day job.

But in this meeting, I saw real progress. I helped set up initiatives to make or refine mappings between HL7 CCD and V2.5.1, HIPAA X12, NCPDP Script, and CCR – many of the key message formats needed for ARRA/HITECH. The aim is to publish these mappings on the HL7 wiki, so anyone can inspect them, comment on them, start running and testing message transformations from them, or refine the mappings for their own use. Maybe this way, we can to shift HL7's balance a little bit away from refining the semantic model, towards making it interoperable with the rest of the world.

The HL7 WGM, Atlanta: another Personal View

By Charlie McCay, HL7 TSC Chair

The TSC spent a good deal of time looking at the Enterprise Architecture Roll-out and seeing how we can get the fork



of the ArB into use without creating confusion for existing projects. There was also discussion about how to ensure that the methodology, modelling and architecture work is progressed in a coherent way – recognising that there are a number of different workstreams within HL7 in this area, and that it is important that the TSC and ARB keep them aligned.

The roadmap was reviewed, and there was much discussion on how we can join up the tactical activity in the working

group with the strategic work of the board. This will help to ensure that the organisation works productively together, and that there is a consistent picture for those looking into the organisation.

The board spent a good deal of time discussing the internationalisation of the organisation – what can be done to make sure that HL7 continues to deliver Globally useful standards, and how the relationships with the US membership and the affiliates may need to evolve. This discussion was given added urgency by the prospect of much more activity in the USA as a result of the Obama initiatives – this will create challenges for HL7 with demands for more implementation guides and standards, as well as the prospect of greater funding from USA sources as direct grants and contracts.

The ITS group looked at the issues encountered by implementers of HL7v3 and suggestions for changes to the wire format of schemas that have come out of implementation projects. There is a slow review process ongoing, with experiments continuing on the basis that projects that use an innovative format are only a transform away from the current normative ITS, and while there is interest in continuing to review progress and experiences at the next WGM, there is not a project team wanting to progress a significantly different ITS project in HL7 at this time. There is a project to publish the XML ITS Structures 1.1 and ballot XML ITS Structures 2 (to support ISO datatypes). There is also an intention to ballot as an information document an XML ITS 1.1 for datatypes, to include those features of the ISO datatypes that are most backwards compatible with the XML ITS R1 datatypes. This is a stepping stone for some existing projects, and is not being promoted for widespread use.

From the TC Chair - The "v4" phenomenon

By Ann Wrightson

Now & again over the last year or so, especially when HL7 folks are talking about what they heard someone had said at the last WGM, I hear the phrase "version 4". Nothing definite, but probably a sign of growing feeling that a fresh approach may be needed. Within this overall feeling, there are a number of strongly contrasting views, and my main purpose here is to capture the essence of some of this debate & make it more visible and accessible to UK members.



"When I hear 'Version 4' I reach for my [insert favoured lethal weapon here]" says a v3 champion - & they are right, HL7v3 is a valiant effort and has created a lot of shared knowledge in published, referenceable form, as well as a number of interoperability standards with a significant level of adoption.

Cecil Lynch, who has concerns as a system vendor, practical clinician and medical researcher, put another point of view very forcefully in a recent maillist exchange. This is a small extract from a long and eloquent post: "To simplify what we do now is to ignore the fact that what we are trying to do (or at least what we should be trying to do) is make medical data discoverable and accurate to enable the cure of diseases. We tend to lose this and have this idea that interoperability is the end goal, when the real end goal is aggregation of like data (through interoperability) to enable the research (understanding) to cure disease. ... from my perspective, I think for vendors to complain about the complexity is unbelievable since every

bit of the RIM is needed and in some cases, is not enough. If they can't implement it, then they need better informatics and IT training, it does not mean it is too complex."

Alongside this we have to put the manifold complaints that have been received about the difficulties of implementing v3 messaging for interoperability. At the last WGM the ITS working group (which looks after XML implementation of v3) devoted several sessions to presentations about a range of problems experienced in the field, including for example a very thorough presentation from Canada.

Another illuminating session for me at the last WGM was discussion of the clinical data aspect of the next generation of CDA (the right hand side of the model).

My own related work has been a contribution to the emerging ISO standard (13972) on principles for the development of "Detailed Clinical Models": concise yet meaningful chunks of clinical information that can be reused in different contexts. Since such information intrinsically has a strong impact on patient safety, we must not ignore recent research in data exchange showing that complexity in data schemas and mappings has an exponential effect in principle on the difficulty of data exchange - a piece of theory that is strongly supported by practical results from the W3C databinding project that showed that all but the simplest XML schema structures may cause loss of data in current integration technologies.

Another witness for the virtues of relatively simple and flat data structures for integration is the continuing popularity of HL7v2 (in the face of all the reasons that justified the phenomenal amount of work that has gone into HL7v3). CFH's current work

on a mainly HL7v2 based Interoperability Toolkit reinforces this point.

The problem we face in the UK and as an international SDO is that all these voices have a good point. An area of strong hope for me is that the idea of "Services on the EHR" or more generally "Services on a domain model" is no longer just something that the SOA working group might talk about, but is coming up in a number of contexts. Services provide a natural context for achieving simplicity in interaction without necessarily losing out on meaning, even complex meaning. (Not yet realized well in the HL7 SOA specs, but that's a different article). HL7v3 messages are sufficiently complex to foster the illusion that the message (& therefore, processing of the message using the published schema) should be all we need. However, the significant amounts of documentation accompanying every v3 interface I know are a self-evident refutation of this position.

So what might v4 look like? - my bet would be on simple-enough-to-be-doable data exchanges (learning from v2) based on models that do capture the required complexities (learning from the semantic modelling of v3). How will it work? - I'm not sure, but I look forward to being part of working it out. SAEAF and SOA are potentially a v. important part of the mix - if SAEAF can succeed in clambering away from the risk of drowning in complex wording, and SOA can succeed in growing beyond its origins as a defensively-marginal aspect of HL7 into a mature approach to sharing health information.

One Member One Vote - What was it? What did it achieve?

A perennial tension in HL7 International is that between the US membership and members of affiliates, & to lesser extent between larger affiliates and smaller ones. The HL7 One Member One Vote committee was established to raise awareness of issues around the balance between US and international Affiliates in the international HL7 organization, and in particular to address one specific issue. This issue is inconsistency in voting rights between members in the US and elsewhere, in particular in the number of votes available to different countries. With a clear stake in the issue HL7 UK was been involved in this committee since its inception until it was laid down at the last WGM.

A notable success of the OMOV committee was to redress some of the imbalance between country affiliates of different sizes by raising the former limit of 8 votes that a country can have to a straightforward pro-rata number of votes equal to 10% of our membership (currently there are just over 200 UK members). Following a committee resolution at the Kyoto working meeting in May, the HL7 Board ratified this decision on 1st June.

In practice in the HL7 ballot process even a single negative vote against a standard must be resolved, so the actual number of votes isn't generally critical. More significant in practice was the politically unpopular issue of larger countries having, at 8 votes, less influence numerically that some US based corporations, and the new

resolution goes a long way to alleviate this. A longer term goal is to have true "one member one vote", where any member worldwide can vote directly on the standard without needing to do this via their national HL7 body (as is still the case). However, there are a number of other organizational issues to resolve before this becomes practical. The main immediate practical issue now is how to keep track of a de-centralised global membership. One of the last actions of the OMOV effort was to promote, successfully, the establishment of a global directory of HL7 members, comprising direct members of HL7 International and members of country affiliates.

HL7 UK Events

This list is correct at the time of writing. See the HL7 UK website for the most up to date listing.

09 Dec: Board Meeting

16-17 Dec: Technical Committee Working Meeting, London
2010

Feb tbc: Technical Committee Working Meeting, London

3-4 March: HL7 UK Conference, London

20 April: AGM & Technical Committee Working Meeting, London

Please send contributions and ideas for articles to: ezine@lists.hl7.org.uk

HL7 UK wish you all a Merry Christmas and a Happy New Year

**HL7 UK
2010**

**Healthcare Connections
- The Next Decade
London, 3rd & 4th March**