HL7 Volunteers Around the World: Creating Better IT for Healthcare

Report from the 30th Annual Plenary and Working Group meeting in Baltimore

2016 Volunteers of the Year

HL7 FHIR National Standard Profiles Published in the Netherlands

Enhancing ER readiness with HL7 and OASIS

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Update from Headquarters

By Mark McDougall,
HL7 Executive Director

30th Plenary Meeting breaks attendance record

The 30th Annual Plenary and Working Group Meeting attracted more than 600 attendees, setting the record for highest attendance ever at an HL7 meeting.

Over 60 work groups convened in September at Hyatt Regency Inner Harbor Hotel in Baltimore. The week also featured more than 30 tutorials with a special government track, as well as a packed Fast Healthcare Interoperability Resources (FHIR®) Connectathon.

The plenary program was kicked off by an "HL7 30 years of changes" video to the incredible David Bowie song "Changes." Be sure to check it out:

https://www.youtube.com/watch?v=0NqBLgFxanQ&feature=youtu.be

The Plenary meeting featured an impressive series of keynote presentations from:

- Mark McClellan, MD, PhD, inaugural director of the Duke-Robert J. Margolis, MD, Center for Health Policy at Duke University; Formerly, Administrator of CMS

- Paul Rothman, MD, Dean, Medical Faculty; Vice President, Medicine, Johns Hopkins University; CEO, Johns Hopkins Medicine

- Robert Califf, MD, Commissioner of food and drugs at the United States Food and Drug Administration

- Betsy Humphreys, Deputy Director, National Library of Medicine

- Jonathan Perlin, MD, PhD, President, Clinical Services and Chief Medical Officer, HCA

- Jim Forbes, Chief Technology Officer, University Health Network, Toronto, ON, Canada

The Plenary meeting also featured a "Blast from the Past" panel that was moderated by Ed Hammond, PhD, with presentations from Sue Campbell, Wayne Tracy and Clem McDonald, MD. There was another panel presentation later in the week that shared insight on HL7's early years that was moderated by John Quinn and included presentations from Wes Rishel, Mike Glickman, and Ed Hammond.

At the end of the plenary program, Steve Posnack, ONC's Director of Standards and Technology, presented the winners of the C-CDA rendering tool challenge that was announced earlier in the year. The winners were:

> **First Place Winner** ($15,000 prize)
> The Intelsoft C-CDA Viewer, developed by: Bryn Lewis, PhD, Principal Software Development Consultant, Intelsoft
> https://github.com/brynlewis/C-CDA_Viewer

> **Second Place Winner** ($5,000 prize)
> Patient Insight, developed by: Will Tesch, CEO, HealthLX Inc.
> https://github.com/healthlx/HL7Challenge.git

Board Election Results

During HL7's annual business meeting in Baltimore, the results of the recent Board elections were announced for the following positions on the Board. Other than the Chair-Elect position, the others will serve a term of January 2017 through December 2018.

- Chair-Elect: Calvin Beebe, Mayo Clinic (who will serve as the Chair-Elect in 2017, as Board Chair 2018-19, and as Vice Chair in 2020)
- Secretary of the Board: Hans Buitendijk
- Director: Nancy Orvis, U.S. Department of Defense, Military Health System
- Director: Melva Peters, Gevity
- Affiliate Director: Frank Oemig, PhD, HL7 Germany

We are pleased to congratulate these individuals for their commitment and valued service to HL7 as members of the HL7 Board of Directors.

2016 Benefactors

Benefactors and Supporters

We are thrilled to continue to attract impressive numbers of HL7 benefactors and gold members, who are listed on page 14. Their support of HL7 is very much needed and sincerely appreciated. A special thank you is extended to those firms that represent our 2016 HL7 benefactors and gold members.

2016 Gold Members

Volunteers of the Year

We were pleased to recognize three incredible volunteers for their dedicated service to HL7. This year marks the 20th year that we have recognized such individuals via the W. Ed Hammond, PhD HL7 Volunteer of the Year Awards. The recipients of the 2016 HL7 Volunteer of the Year Awards included:

- Claude Nanjo (Cognitive Medical Systems)
- Brian Postlethwaite (Health Connex)
- Sandra Stuart (Kaiser)

We are honored to recognize Claude, Brian and Sandy as dedicated individuals who have made significant contributions on many fronts, including in specific HL7 Work Groups and throughout the larger HL7 global organization. Their efforts and contributions are sincerely appreciated and this recognition is certainly well-deserved. Please see the article on page 9 to read more about the impressive contributions that these dedicated volunteers have made to HL7.

Reception Celebration

The networking reception featured a mini-program that recognized a number of key contributors to HL7's success over the last 30 years including:

- The HL7 Fellows Class of 2016
- Recipients of the Ed Hammond Volunteer of the Year Awards throughout the last 20 years
- Chairs of the HL7 Board of Directors throughout the last 30 years
- HQ staff who served HL7 over the last 25 years
- Reenactment of the 1992 HL7 Board of Directors photo

HL7 Board Chairs throughout the last 30 years

1992 Board photo reenactment

A group photo of all of the W. Ed Hammond Volunteers of the Year Award recipients over the past 20 years.

HL7 Fellows Class of 2016

The HL7 Fellowship program recognizes individuals with outstanding commitment and sustained contribution to HL7 with at least 15 years of HL7 membership. During HL7's 30th Plenary meeting, HL7 honored the following seven well-deserving members with distinction as HL7 Fellows in the Class of 2016:

2016 HL7 Fellows

- Fernando Campos, Argentina
- Hugh Glover, UK
- Rob Hausam, USA
- Charlie McCay, UK
- Lloyd McKenzie, Canada
- Ken Rubin, USA
- Amnon Shabo, PhD, Israel

2016 Plenary Meeting Sponsors

Meeting Sponsors

We are pleased to recognize PenRad for co-sponsoring our networking reception as well as the other organizations that sponsored key components of our 30th Annual Plenary and Working Group Meeting in Baltimore:
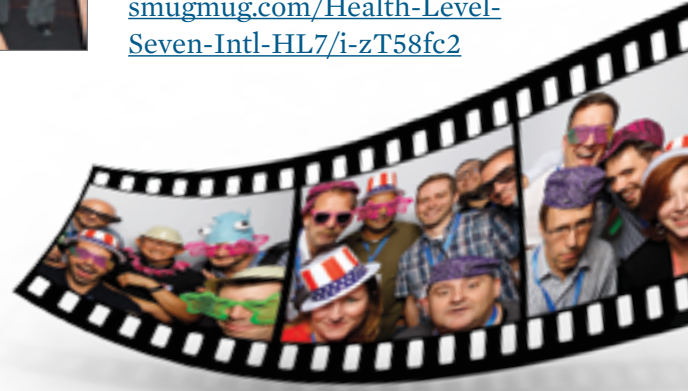
- AEGIS – Room keys for attendees
- Gevity – Wednesday cookie break
- iNTERFACEWARE – Lanyards
- PenRad - Wednesday Networking Reception

The additional sponsorship support provided by these organizations contributes heavily to HL7's meeting budget and is much appreciated.

HL7 Photo Booth

A photo booth was also enjoyed by many of HL7's hardworking volunteers during the networking reception. Visit the URL provided below to see how they celebrated HL7's 30 years of standards development:

https://pixilatedphotobooth. smugmug.com/Health-Level-Seven-Intl-HL7/i-zT58fc2
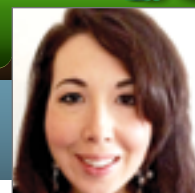

Organizational Member Firms

As listed on pages 20-23, HL7 is proud to recognize the organizations who are HL7 organizational member companies. We sincerely appreciate their ongoing support of HL7 via their organizational membership dues.

In Closing

During the networking reception celebrating our 30th Plenary meeting, it was heart-warming when I was recognized for serving HL7 for the last 25 years, and Karen for her 20 years of service to HL7. Clearly, HL7 is in our blood. HL7 staff and our long time HL7 members are our family away from home.

It is imperative that I acknowledge and sincerely thank Karen Van Hentenryck for her exceptional service to HL7, to AMG and to me personally over the last 20 years. Not only is Karen the best manager I have ever had the pleasure of working with, but she is also an incredibly amazing person to work side by side with for 20 years.

Finally, as I was concluding the last general session at our Plenary meeting, Dave Shaver announced to all that it was my birthday and led a rendition of several hundred people singing "happy birthday". Of course, I was certainly surprised and quite moved. I would like to extend my sincere thanks to my co-workers at HQ, Dave, and to the HL7 Tabernacle Choir for making my birthday one for the ages.

HL7 and OASIS Announce Joint Publication

By Andrea Ribick,
HL7 Director of
Communications

Implementation Guide to Advance Emergency and Disaster Response

Enhances ER readiness and improves transition of care between first responders and hospitals

HL7 and OASIS recently published a joint implementation guide to bridge the electronic gap between emergency response and hospital communities, improving emergency patient coordination and ER readiness.

The guide, *"HL7 Version 2.7.1 Implementation Guide: Message Transformations with OASIS Tracking of Emergency Patients (TEP), Release 1"* is expected to improve accuracy and timeliness of data exchange between the emergency response community and hospitals, and between care facilities in everyday and disaster situations.

It will also eliminate the need to re-enter or duplicate patient information for incoming emergency patients.

The implementation guide will improve data exchange by providing a mapping between the OASIS Emergency Data eXchange Language (EDXL) TEP 1.1 message, which enables the coordination of patient movement across the continuum of emergency medical care, and the HL7 Version 2 Admit Discharge Transfer (ADT) messaging standard used in the healthcare setting.

It will allow hospitals and emergency departments to track incoming patients from emergency services in the field via existing HL7 conformant systems.

When a patient must be transported from a healthcare facility by emergency services to another healthcare facility, such as day-to-day transfers or hospital evacuation, the bidirectional data exchange facilitated by the guide enhances continuity of care.

For more information about the implementation guide or to download it free of charge, please visit the HL7 website at: http://www.hl7.org/implement/standards/product_brief.cfm?product_id=439.

The guide is also available via the OASIS website at: http://docs.oasis-open.org/emergency/TEP-HL7v2-transforms/v1.0/TEP-HL7v2-transforms-v1.0.html.

For more information online:

http://www.HL7.org/implement/standards/product_brief.cfm?product_id=439

HL7® FHIR® APPLICATIONS ROUNDTABLE

Tuesday–Wednesday, March 7–8, 2017

The Great Hall in The Mary Duke Biddle Trent Semans
Center for Health Education
Duke University Medical Center, Durham, NC

Thank you to

Duke University
School of Medicine

and

Duke Clinical & Translational
Science Institute

for providing the space
for this event

What is the HL7 FHIR Applications Roundtable?

The HL7 FHIR Applications Roundtable is a two-day event featuring numerous short form presentations/demos from providers, vendors, academic institutions, start-ups and other individuals showcasing FHIR-based solutions that are currently in development or already deployed.

The purpose of the HL7 FHIR Applications Roundtable is to educate the healthcare industry about the power and maturity of HL7 FHIR. The FHIR Roundtable is not a technical meeting; no code-a-thons or work group business will take place. Anyone interested in understanding, implementing or developing FHIR applications will find value in this event.

Are you interested in presenting your FHIR-based solution at this event?

HL7 is inviting submissions from across the healthcare industry of HL7 FHIR-based solutions already in use or being piloted. Submissions will be accepted from all, including providers, vendors, academic institutions, start-ups and other interested parties. Presenters will also have an opportunity to demo and network with attendees after their presentation.

In order to be considered for a 15-minute speaking session, you must complete this short survey:

www.surveymonkey.com/r/2017FHIRapps

Deadline to submit: January 31, 2017.
All submissions will be reviewed by the planning committee and selected speakers will be notified by February 15, 2017. All speakers who are selected will also receive a table at a designated time to answer attendees' questions about their product(s).

Want to sponsor the HL7 FHIR Applications Roundtable?

Event sponsorships are available for $1,000. Sponsors receive two tickets to the event as well as their logo on all marketing materials, including the on-site program and email promotions.

For more information about becoming a sponsor, contact Melanie Hilliard at melanie@HL7.org

Registration

$300 for HL7 members
$450 for non-members

Register online at
bit.ly/2017FHIRapps

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Member Spotlight on Diego Kaminker

Diego Kaminker first contacted the HL7 community in 1999 after implementing HL7 Version 2.x lab and ADT messaging in the Hospital Italiano de Buenos Aires, Argentina, looking for ways to disseminate the use of HL7 in the country. He recalls being warmly received at his first working group meeting (WGM) by the HL7 leadership. Since the early days of his involvement, Diego has been an integral member of the HL7 community. He was a recipient of the "HL7 Volunteer of the Year" in 2008, received an ad-hoc Harley Award for Standards Education from Keith Boone's blog in 2011 and was elected as an HL7 Fellow in 2015.

HL7 Argentina was created in 2002, and Diego served as the technical lead and chair for the affiliate. He is currently a board member of HL7 Argentina and also served as an affiliate director in the HL7 International Board from 2012 to 2015. In addition, he was a member of the International Mentoring Committee where he helped new HL7 affiliates. Diego currently co-chairs the HL7 International Education Work Group and the HL7 International Council.

Diego began teaching HL7 for the Argentinean health IT community in 2004, creating a hands-on three-month course. The success of this course led Diego and Fernando Campos to create an online course to reach the larger community of Argentina provinces and other Latin American countries. The 2005 course, which received a very good reception in the Spanish speaking community, covered HL7 Version 2 (V2), Version 3 (V3) and Clinical Document Architect (CDA®) Release 2.

Three years later, HL7 International had Diego and Fernando translate the online e-learning course into English. Over the past eight years, this course has been taught to more than 5,000 students from over 100 countries, and was translated into Portuguese and Japanese. Its current name is "The HL7 Fundamentals Course." Ten percent of students from low and middle-income countries are welcome to participate in the course via a scholarship program. Along with Fernando, Diego created the HL7 Fast Healthcare Interoperability Resources (FHIR®) Fundamentals course last year.

Diego also contributed to the health IT standards module for the Columbia University HIT Certificate Program. In addition, he created HL7 International's Meaningful Use Hands-On Workshops, covering HL7 standards related to HITECH programs.

Diego manages the Standards Help Desk for HL7 International, where he helps a team of six agents from all over the world answer questions on standards from the global HL7 membership community.

Diego is a managing partner of Kern Information Technology (Kern-IT SRL), a company that creates and sells advanced Laboratory Information Systems and HIT Standards consulting. In addition, he is currently working on a FHIR & CDA R2 based project (MAIS – "Marco Argentino de Interoperabilidad en Salud") to exchange e-claims and e-claims attachments.

Diego tries to walk one hour per day (thinking about new laboratory information system functionality and HL7 tutorials maybe?), and is a (mostly) amateur clown and stand-up comedian. He enjoys the beach and writing short stories in English and Spanish. Diego also enjoys cooking, which he does daily for his kids (Andrés and Ariel, 14 and 11 years old) and his wife (Estela), who support his software/workshops development endeavors and his continuous traveling since 1987.

HL7 Volunteers of the Year

HL7 honored three members with the 20th annual W. Edward Hammond, PhD Volunteer of the Year Award. Established in 1997, the award is named after Dr. Ed Hammond, one of HL7's most active volunteers and a founding member as well as past Board chair. The award recognizes individuals who have made significant contributions to HL7's success. The 2016 recipients include:

- Claude Nanjo, MPH, chief scientist, Cognitive Medical Systems
- Brian Postlethwaite, senior solutions architect, HealthConnex
- Sandy Stuart, executive director, health IT standards, Kaiser Permanente

About the Volunteers:

Claude Nanjo, MPH, has been a member of HL7 since 2012. He has been an instrumental volunteer on several HL7 initiatives, including the Clinical Information Modeling Initiative (CIMI) and the Clinical Quality Framework (CQF) initiative. Claude is skilled at connecting people and building bridges between different HL7 work groups to effectively solve challenges and move projects forward. In addition, he has been instrumental in the work to harmonize various data modeling initiatives related to quality measure and improvement.
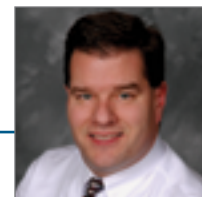
Brian Postlethwaite is a member of HL7 Australia and serves as co-chair of the HL7 Patient Administration Work Group. He is also actively involved with HL7 Fast Healthcare Interoperability Resources (FHIR®) and is a member of the FHIR Management Group. Brian has dedicated time and effort in creating FHIR resources for the Patient Administration Work Group.

Sandy Stuart has been actively involved with HL7 since she joined the organization in 2002. She holds several leadership roles in HL7, including serving as a co-chair for the Infrastructure and Messaging Work Group, the Process Improvement Committee and the Terminology Authority. Additionally, she is a member of the HL7 Technical Steering Committee, where she co-chairs the Technical and Support Services Steering Division. Finally, she has volunteered for the five years at HL7's exhibit at the HIMSS annual conference. ■

News from the HL7 Project Management Office

Progress on Two ONC Grants

By Dave Hamill,
Director, HL7 Project
Management Office

ONC Grant Project: Enhancing C-CDA Implementation and FHIR

In 2015, The Office of the National Coordinator for Health IT (ONC) awarded HL7 a grant to enhance and improve Consolidated Clinical Document Architecture (C-CDA®) implementation and support the Fast Healthcare Interoperability Resources (FHIR®) infrastructure.

That grant covered eight components in total:

1. Discovery of C-CDA content inconsistencies via surveys and in-person implementation-a-thons

2. Extension and/or modification of template samples to address inconsistencies identified by item 1 above

3. Creation of an updated C-CDA Release 2.1 (R2) Companion Guide informed by items 1 and 2 above

4. Updates to the HL7 Help Desk section specific to C-CDA to address items 1-3 above

5. A C-CDA rendering prize challenge

6. A C-CDA scoring methodology

7. Enhance/Upgrade the platform where C-CDA sample templates reside

8. Define FHIR Repository processes

Six of the eight items are complete; the other two are currently underway.

Just prior to the 30th Plenary Meeting in Baltimore, HL7 conducted a third C-CDA Implementation-A-Thon (IAT). A fourth IAT was held in San Antonio preceding the January WGM. HL7 plans to continue IATs in the future as it looks for ways to make them self-sufficient without needing assistance from grant funds.

Andy Stechishin of CANA Software & Services and Brett Marquard of River Rock Associates teamed up to extend and modify C-CDA template samples as well as upgrade the platform where the C-CDA samples resided. Brett modified and enhanced C-CDA samples by standardizing the sample metadata content, creating a single source for storing the samples and upgrading the samples to C-CDA R2.1. Andy developed a Heroku web application that provided indexing and searching the metatdata to improve C-CDA sample discoverability.

Jean Duteau and Joginder Madra of Duteau Design balloted the C-CDA R2.1 Companion Guide in the September 2016 cycle. The team worked with the Structured Documents Work Group to reconcile ballot comments and publish the guide this past quarter.

The winner of the C-CDA Rendering Tool Challenge, Bryn Lewis of Intelsoft with the development of the C-CDA Viewer, was announced at the conclusion of the 30th Plenary Meeting. The second place tool, Patient Insight, was developed by Will Tesch of HealthLX, Inc. Both tools are available on the HL7.org website under Tools > Resources and Tools > CDA Tools > C-CDA Rendering Tools.

The focus of the C-CDA scoring methodology component was to create a methodology, approach and requirements with the ultimate goal of creating a tool to score C-CDAs that have been created or received.

Thank you to Calvin Beebe, who extracted the rubrics that were used to create the SMART C-CDA Scorecard tool. The Structured Documents Work Group reviewed the data and it was ultimately provided to the ONC for the development of their tool.

The two components currently being worked on are the updates to the HL7 Help Desk section specific to C-CDA and defining FHIR repository processes. Robert Dieterle of EnableCare, LLC is leading the defining FHIR repository processes project.

Last fall, the ONC extended the grant and provided additional funding for the components listed below. RFPs have either been issued or will be issued soon for each of these projects:

1. Create a FHIR Profile Registry/Repository Prototype
2. Modify/Enhance C-CDA Value Sets
3. Harmonize/Standardize FHIR Terminology and Information Models
4. Develop a FHIR Tools and Profile Roadmap

HL7 is thankful for ONC's continued support of C-CDA and FHIR for 2017 and beyond.

ONC Grant Project: Standards Development Organization Collaboration to Enhance Standards Alignment, Testing, and Measurement

HL7 completed its work to fulfill the grant awarded by the ONC to develop a plan to ensure that conformance testing is available across its portfolio of implementation guides.

The project was scoped to include only those implementation guides that were developed for the US and/or Universal realms, which resulted in a catalogue of 55 IGs. While the project specifically did not address implementation guides developed for non-US or non-Universal realms, the assumption was that the recommended approach could be extended to include those implementation guides at a later time.

HL7 contracted with Gevity Consulting to perform a gap analysis to determine the current conformance tooling available for the set of implementation guides included in the scope of the project.

The primary objectives of the gap analysis were to:

• Identify and evaluate all extant conformance tooling for implementation guides within the scope of the project.

• For guides without tools, identify the perceived need for tooling and estimate the effort required to develop tools.

• Provide recommendations regarding the creation of tooling to fill the identified gaps and prioritize the needs.

Gevity's research determined that for the 55 IGs, 24 conformance tools exist but 18 IGs lack any associated conformance tools. Gevity's report provided an assessment of the need to develop tooling for those 18 IGs and the estimated effort required for development.

Using the above information as well as input from the TSC, HL7 submitted their final report to the ONC in October. HL7's proposed approach is to require that its implementation guides provide relevant conformance statements that are machine computable and robust enough to enable conformance tooling vendors to develop conformance tooling concurrent with the development of the implementation guide.

To achieve the desired future state, HL7 proposes:

• Develop a policy that requires conformance statements in all implementation guides

• Develop guidance documents that define how to develop robust conformance statements

• Train work groups to develop the conformance statements

• Recruit conformance facilitators

• Develop a plan for creating conformance statements for all or some subset of extant implementation guides for which there is no conformance tooling.

• Develop and maintain a tooling catalog

• Continue efforts to create examples (CDA) and models (CIMI) for representing data

Unfortunately, additional grant funds have not been approved to pursue the above work.

The ONC also requested that HL7 identify a means to collect and report implementation/usage data at the message level on an annual basis. This was one of the most difficult aspects of the grant as there is no obvious source from which to collect and report the requested data. Even if we could find a reliable source to provide the data, reporting that would likely require a significant amount of time and effort on the part of the organization responsible for reporting the data. Hence, HL7 is of the opinion that it does not have the expertise to collect the data and would therefore recommend that the government either outsource the project or fund HL7 to oversee a project that is outsourced to a qualified entity.

HL7 appreciates the opportunity to have developed this plan for the ONC and is willing to embark on the plan if and when the ONC is ready to do so. ◼

NEDERLAND

HL7® FHIR®

Validation, management, maintenance and publication

Publishing National Standard HL7 FHIR® Profiles in The Netherlands

Bert L. Kabbes, Chair,
HL7 The Netherlands

The open source character of the HL7 FHIR® standard implies that any organization or individual(s) can create FHIR profiles, derived from the core FIHR profiles on Simplifier.net. This situation can (obviously will) lead to many different or duplicate profiles for the same purpose, published via numerous sources, without any objective validation or qualification: e.g. whether profiles meet the specific requirements, laws and regulations in a certain realm, whether extensions and/or constraints are defined consistently or whether profiles meet the specific functional requirements of a certain domain.

For any realm, this situation will indefinitely lead to "chaos" instead of local standardization. Users will be confronted with many sites where HL7-FHIR profiles are published, never knowing for sure if profiles meet the requirements of a certain domain or whether profiles are consistent with local laws and regulations.

What is needed in each realm is a validating organization, a validation certificate (stamp) as well as one single publication source where all validated national HL7-FHIR profiles can be found. These validated profiles will be defined as the "national standard HL7-FHIR profiles". These profiles will serve as the national generic profiles, which everyone should use preferably, either "as is" or as the basic profiles for possible specific extensions. A central local managing organization should control the validation process and procedures, publication and maintenance.

Leading Role of HL7 Affiliates in FHIR validation

In general, the HL7 affiliates are in a unique position to respond to the need for standardization of local HL7 FHIR profiles in their realm (country, continent), by taking the lead in creating an organization as described above. Moreover, only HL7 affiliates are best positioned to validate, stamp and publish standard FHIR profiles with an official "HL7-FHIR-NL approved" certificate.

Recently HL7 The Netherlands (in collaboration with the National Healthcare IT Institute Nictiz) has taken the initiative to set up a specific organizational group within the HL7 Netherlands Affiliate. This organizational group will validate HL7-FHIR profiles against several sets of national requirements, judge profiles on technical and functional consistency and quality as well as provide central publication, maintenance and updates.

Overlapping and duplicating profiles as well as incorrect profiles will be filtered out and will be discussed with the creator(s) for improvement. Successfully validated profiles will receive the qualification stamp "Validated HL7-FHIR-NL standard profile" and will be published by HL7 The Netherlands via a specific project within the central international HL7 FHIR website Simplifier. net. This project on Simplifier. net is the single source for all validated national standard HL7-FHIR-NL profiles.

By creating a specific FHIR-NL entity within HL7 The Netherlands that will take up the role and actions as mentioned before, users will be provided with a single national publication source for generic, validated HL7-FHIR profiles, easy access and certain guarantees that these validated profiles do meet the requirements of specific domains and national laws, regulations and standards.

Organizational Set-Up

HL7 Netherlands has created a specific HL7-FHIR-NL entity, operating on two levels:

- A *"FHIR-NL Management Board"*: each organization who wishes to have their profiles validated and published as a "national HL7-FHIR-NL profile" should (must) send a representative to this board

- A *"FHIR-NL Validation & Publication Team"*: each organization who wishes to have their profiles validated and published should (must) send a functional/technical representative to this team

Any organization that develops FHIR profiles will be actively invited to have their profiles validated and published centrally. Organizations that have their FHIR profiles validated will automatically become a member of the two entities as mentioned above. This will lead to user driven groups who cooperate and share their views.

HL7 The Netherlands will widely advertise to the Dutch market to only use FHIR profiles which have been validated. The risks of implementing non-validated FHIR profiles will be explained.

The main tasks of the FHIR-NL Management Board are to:

- Define general and specific validation criteria and requirements
- Judge on validation readiness of validation requests
- Initiate validation process by the validation team
- Provide resources for validation process
- Formal approval of the validation results
- Manage the validation team

The main tasks of the FHIR Validation and Publication Team are to:

- Define detailed validation criteria, validation sets and requirements
- Conduct and execute the validation procedure
- Report the validation results including advice regarding failures and improvements
- Maintain validated profiles
- Publish
- Maintain the publication environment in Simplifier.net
- Act as central contact point/ helpdesk and publish FAQ's

The background for the organizational set-up as outlined above is that this way a growing group of HL7 FHIR profiles developing organizations will automatically perform the validation work. As will be the situation in many HL7 affiliates, HL7 The Netherlands is unable to take up and execute all the work in addition to our prime responsibilities and tasks. The chosen set-up therefore is in line with the fundamental character of HL7: a user community.

Publishing National Standard HL7 FHIR® Profiles in The Netherlands

Added Value of the HL7 FHIR-NL Initiative

The added value of the initiative and organizational set-up is the following:

For parties who develop HL7 FHIR profiles:

- Receive an official certificate as a "national HL7-FHIR-NL standard profile"
- Explicit recognition and publication as being the developing organization
- Marketing opportunities
- Business opportunities to sell paid support, education and implementation support to parties who wish to use validated profiles
- Contribution to national standardization of open source software
- Active participation in the HL7 FHIR-NL management board and validation team

For parties searching for HL7 FHIR profiles:

- Certainty that profiles are formally validated and do meet local realm specific laws and requirements
- Ability to check available profiles via one national publication source
- Save costs by using validated profiles and avoid risks
- Availability of a central contact point and helpdesk
- Availability of experienced support by the developing parties
- Availability of specs and requirements for RFP's
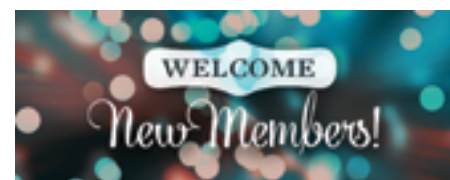
For HL7 Affiliates:

- Contribute to national standardization
- Strive to avoid chaos as a result of random development and publication of profiles by numerous parties
- Provide a member driven organizational entity within the affiliate
- Add value for HL7 affiliate members and membership
- Create continuity for the affiliate by fulfilling an important role in the open source world of HL7 FHIR

Conclusion

The initiative and organizational set-up as described does not interfere with, nor violate, the open source character of HL7 FHIR. This aspect has been thoroughly checked with the HL7 FHIR management as well as with several key persons within HL7 International.

The set-up does not in any way create a barrier in the free use or development of any HL7 FHIR profile; it just adds value to local FHIR profiles by formal validation, central publication and the providing of support. It will remain an organization's free choice and decision to request validation and to take part in the national standardization of FHIR profiles. However, HL7 The Netherlands will clearly communicate to the market the general advice to only use validated HL7 FHIR-NL profiles.

This initiative seeks to avoid the risks often connected with using open source software. Without measures aiming for local validation like in this initiative, HL7 FHIR as being "open source" might eventually become a "danger" to national standardization in healthcare. ◼

HL7 Welcomes New Members

Gold

- ActioNet, Inc.
- Haines I.T.
- HealthRx Corporation
- TBiOS-Total Business Integration Operating Solutions
- UCSF School of Medicine
- VNB Consulting Services

Organizational

- Commerce Kitchen
- Curandi
- European Medicines Agency
- MEDarchiver srl
- Nant Health
- National Comprehensive Cancer Network
- Nexus Point Systems Integration, LLC
- NJ Division of Developmental Disabilities
- UCLA Health

Companion Document for Cloud-based Solutions in Healthcare

The HL7 Cloud Planning Guide – A Preview

By Ken Rubin, Co-Chair,
HL7 Services Oriented
Architecture Work
Group

Cloud computing is arguably one of the most significant technology-based transformative agents to come along in years, if not decades. That said, HL7 hasn't undertaken any direct cloud work or produced any guidance—until now. The *HL7 Cloud Planning Guide* has been under development since early 2016.

Why does HL7 need a point-of-view around cloud?

There is a broad spectrum of technical alternatives that are all classified as "cloud" efforts, from re-platforming existing systems and applications into a web-based hosted model (Infrastructure-as-a-Service – IAAS), through an architectural modernization approach to service-enable and host shared components usable by multiple applications or systems (Software-as-a-Service – SAAS). Before undertaking this work, HL7 had to answer a seminal question: *whether HL7 has a role in cloud at all, and if so, what is it?*

We conducted an informal membership survey to validate our working assumptions and answer this question. Approximately 50 organizations elected to participate in the survey. At a high level, questions asked about the members' interest in cloud computing, current progress and activities underway, their rationale and driving factors influencing the cloud work, their high-level approach, and other contextual inputs to help discern patterns and potential relevancy to HL7. The results were very insightful.

While it was very clear that a good portion of respondents were executing cloud activities as an "infrastructure play", a significant majority were leveraging cloud as part of their strategic direction, with approximately 80% of respondents indicating that enhancing interoperability was a key element of their cloud strategy, and well over half of the respondents indicating that their cloud interest involved either extending, adapting, or acquiring new capabilities as part of their migration strategy.

Also significant was that the survey provided insight into "shared services" that could be leveraged across health IT solutions, including interest in role-based access and authentication services (70%), master person and provider indices (60%); workflow, care coordination, and security key management (40%+ each), among others.

Distinct from an implementation guide, the *Cloud Planning Guide* is intended to be a companion document for the stakeholder with responsibility to plan, design, or implement a cloud solution for a healthcare organization. It will provide a primer to cloud terminology; a compendium of vetted industry resources with links to allow the reader quick access to quality content; and can be viewed an assembly of best-practices and consideration points that are particular to health organizations and settings.

The guide is not intended to be an authoritative reference; rather it provides a jump-start to help its readers make informed decisions and elevate sensitivities to matters that might not otherwise receive appropriate attention. Finally, it contains a set of blueprints that are design patterns highlighting specific needs and challenges as well as articulated proven solution approaches to address them. The design pattern approach has been adapted from seminal computer science literature.

Some of the areas covered in the *Cloud Planning Guide* include:

- A look at security and privacy considerations
- Addressing data residency requirements
- Cloud topologies (public, private, hybrid, community cloud alternatives)
- Compendium of resources
- Cloud maturity model
- Cloud terminology primer

We anticipate a draft release for comment in early 2017 and a ballot release in the May 2017 cycle. The work group developing the guide is meeting weekly and welcoming new participants and contributors. The Service-oriented Architecture Work Group is the primary sponsoring work group of this activity and will maintain ballot responsibilities for the guide. Details about the effort can be found at the SOA wiki on the HL7 website at www.HL7.org. ◼

Applying Focus and Simplicity to the Complexity of HL7 Projects

CTO Update: Navigating through a Crowd

As I continue my pilgrim's journey through the complex world of HL7 standards, I find, not surprisingly, that the boundaries continue to expand.

By Wayne Kubick,
HL7 International
Chief Technology
Officer

Our September Plenary Working Group Meeting was followed all too quickly by the second Partners in Interoperability meeting and the Genomics Conference, along with several other external meetings, all rich with ideas that can stretch well beyond our typical historical scope.

What's more, as I write this, I'm sitting in my first International Standards Organization (ISO) meeting in snowy Lillehammer just below the famous ski jump, being exposed to another diverse universe of different cultural perspectives, needs and activities, fortunately accompanied by many friendly and familiar faces. It's a crowded world.

Back home in Chicago, we hosted quite a crowd ourselves recently

One significant need is a comprehensive retooling plan that will prioritize investments in the most essential areas over the next few years.

as the Chicago Cubs ended their 108-year-old drought in style, at their celebratory World Series Champions parade. Sometimes, as I struggle to make my way through so many HL7 work groups, artifacts, projects, processes and products compounded by an expanse of government and international standards activities, I feel a bit like an attendee of such a rally, happy to see what has been accomplished, but also mystified about what to do next and somewhat apprehensive about how I'm going to find my way back home once it's all over.

And it's sobering to consider how such an already ambitious goal as healthcare data interoperability scales on a global level.

So we take smaller bites, and make our way home one step at a time. The Technical Steering Committee, Standards Governance Board and Architectural Review Board have been very helpful in carving out some of these small bites to help me apply my core philosophies of focus, simplification, and essentialism.

One significant need is a comprehensive retooling plan that will prioritize investments in the most essential areas over the next few years. The current tooling inventory lists 132 tools and we know there are more that we haven't captured yet.

As I said in Baltimore, we need co-chairs to verify that the tools they're using are included in the inventory and that the data recorded about them is accurate. If there are tools in use that are not currently listed, we need you to tell us about them by completing the spreadsheet

Verify that the tools you're using are included in the inventory—add any new tool using the "Submit New Tool" button at the online HL7 Tool Listing page.

form that can be found on the "Submit New Tool" link at the top of the Tool Listing page.

We also need to more actively remediate and improve our tools.

Probably the most essential focus of my attention will be a technical roadmap, which should include the lessons and capabilities of our 30 years of standards development experience toward achieving a common future vision that incorporates the best of what we've created and learned with the most promising approaches to get us there.

Here's where focus and simplicity must guide execution – we need to make it easy for the full global standards community to easily locate and understand our first principles.

And, yes, we need to begin to triage those artifacts, processes and ideas which are most essential toward achieving our vision, which means de-emphasizing those that may have been superseded or are in

the later stages of their lifecycle.

We must also make it easier for our volunteers to minimize overhead, redundancy and rework. I'm hopeful an online PSS will be one small early step to simplify our processes and make it easier to develop standards and share information.

Of course, it tends to be easier to keep the things you use most frequently in the front of the closet rather than to clean out the clutter of the old and unused items at the back, and being an essentialist means committing to doing less, but better. I hope I can follow my own mantra in future updates, limiting my musings to less – a few thoughts at a time – with a definite aspiration of doing so better. Hopefully, we'll all feel more at home, with a bit more of a quiet place of achievement, somewhat away from the crowds. ∎

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Congratulations to the following people who recently passed the HL7 Certification Exam

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Next year, eHealthweek2017 will be organized by Malta on May 10-12, 2017.

May

sun	mon	tue	wed	thu	fri	sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
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28	29	30	31			

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Save the date!

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SAVE THE DATE FOR HIMSS17

February 19-23, 2017

Orlando, Florida

Join us in the HL7 Booth (#943) at the HIMSS17 Exhibit!

HL7 will offer a variety of education sessions covering HL7 standards such as FHIR, CDA and current industry topics such as precision medicine and the Argonaut Project. Visit our booth to learn more about how HL7 is advancing healthcare IT interoperability across the globe.

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Upcoming International Events

Date	Event	Website	Location
January 14-20, 2017	HL7 January Working Group Meeting	www.HL7.org	San Antonio, Texas
February 19-23, 2017	HIMSS17	www.himssconference.org	Orlando, Florida
February 21-23, 2017	HEALTHINF 2017	www.healthinf.biostec.org	Porto, Portugal
April 23-26, 2017	Helina 2017	www.helina-online.org	Bujumbura, Burundi
April 24-26, 2017	Informatics for Health	informaticsforhealth.org	Manchester Central, UK
May 6-12, 2017	HL7 May Working Group Meeting	www.HL7.org	Madrid, Spain
May 14-16, 2017	pHealth 2017	www.phealth2017.eu	Eindhoven, The Netherlands
May 10-12, 2017	eHealthweek 2017	www.ehealthweek.org/	Malta
May 22-24, 2017	Medical Informatics World Conference 2017	www.medicalinformaticsworld.com	Boston, Massachusetts
August 6-9, 2017	HIC 2017	www.hisa.org.au/hic	Brisbane, Australia
August 21-25, 2017	MedInfo 2017	medinfo2017.medmeeting.org/en	Xiamen, China

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Upcoming Working Group Meetings

May 6-12, 2017
Working Group Meeting

Madrid Marriott Auditorium Hotel & Conference Center

Madrid, Spain

September 9-15, 2017
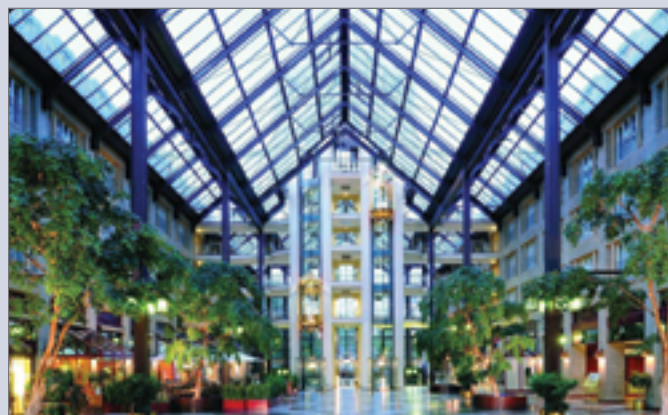## 31st Annual Plenary & Working Group Meeting

Hyatt Regency La Jolla at Aventine

San Diego, California

January 27- February 2, 2018
Working Group Meeting

Hilton New Orleans Riverside

New Orleans, Louisiana

May 12-18, 2018
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