

Analysis of the Feasibility and Benefits of Moving Stewardship of the FHIM to The Open Group

A Report to the
Office of the National Coordinator for Health IT
(ONC)

Submitted January 15, 2019 by The Open Group

Jason S. Lee, Ph.D., Director, Healthcare Forum
(with assistance from the FHIM Transition Council (FTC))

Results in Brief

It is feasible to transition the FHIM to The Open Group with minimal federal effort. Once transferred, the FHIM will be available to Federal Partner agencies at no cost in perpetuity. Using The Open Group's well-documented and highly-regarded standards process we can give the FHIM a structured home in an environment that is open, fair, and unbiased. A home where stakeholders can collaborate to drive consensus and produce standards that are executable by design.

For this Report, The Open Group formed and facilitated meetings of a FHIM Transition Council (FTC) composed, in large part, of key federal partner stakeholders and FHIM architects. By the ninth meeting the FTC had unanimously agreed on two value propositions.

- First, that “FHIM can feasibly be maintained (kept up to date and fit for purpose as new needs evolve) under the stewardship of The Open Group”
- Second, that “[a]n accessible and easy to use FHIM can be key to the success of interoperability efforts (e.g., Cerner's implementation work for the VA and DoD, and other public and private interoperability efforts globally).”

The Open Group has over 25 years of experience working with customers and suppliers of technology products and services, and with consortia and other standards organizations to capture, clarify, and integrate current and emerging requirements, establish standards and policies, and share best practices. Our standards ensure openness, interoperability, and consensus.

We are excited about the opportunity to become the new FHIM steward. Transferring it, making it a standard of The Open Group, and keeping it freely available to federal partners is readily achievable. Beyond this, we are eager to implement our transition and operation plans, described at the end of this Report. First, we aim to enhance the FHIM by keeping it current based on federal partners' needs. Second, we aim to steward the creation of an accessible and easy to use FHIM Profile Builder, in collaboration with other key players (such as HL7 and OSEHRA), to advance interoperability for all.

Introduction

The decision has been made to sunset the Federal Health Architecture (FHA) E-Government Line of Business managed by the Office of the National Coordinator for Health IT (ONC). However, sunsetting the FHA needn't mean letting one of its key programs, the Federal Health Information Model (FHIM), perish. The FHIM "was conceived as a basis for consensus-building among federal partners and as a consistent, model-driven architecture approach to healthcare interoperability." We believe the needs that prompted the development of the FHIM ten years ago are even greater today. Under the stewardship of The Open Group, the FHIM can be part of a collaboration among interested parties that can make a significant positive impact on healthcare information interoperability in the US and beyond.

What We Were Asked to Do

"Evaluate the feasibility and benefits of moving the stewardship of the Federal Health Information Model (FHIM) program to The Open Group's Healthcare Forum when the ONC's management of the Federal Health Architecture (FHA) initiative terminates."

Feasibility

Transitioning the FHIM to The Open Group is, indeed, feasible for three main reasons.¹ First, it is possible (easy and convenient). Second, it is reasonable (makes sense). Third, it is likely to result in success.

1) It is possible

We can legally transfer the FHIM using an uncomplicated contribution agreement between ONC and The Open Group. A contribution agreement simply documents the transfer of all FHIM intellectual property.²

2) It is reasonable

Moving the FHIM to The Open Group is reasonable and practical as it would build on a four-plus year relationship between FHA and The Open Group. In 2014, The Open Group Healthcare Forum (HCF) organized a diverse, international team of experts to conduct a fit-for-purpose analysis of the FHIM. The result was a well-received White Paper that presented five reasons to commend the FHIM and six areas for improvement.³ The HCF was invited to present these

¹ Feasible is defined as 1. able to be made, done, or achieved: 2. possible, reasonable, or likely: 3. possible to do and likely to be successful <https://dictionary.cambridge.org/us/dictionary/english/feasible>

² FHIM intellectual property includes FHIM source code, FHIM-related documentation and work products produced by ONC and its contractors, content at www.fhims.org including the name of the website, and content posted at <https://github.com/FHIMS/FHIM>.

³ See <https://publications.opengroup.org/w153>

results at FHA Managing and Governing Board meetings. Since 2015, the FHA has been an active and valued member of the HCF. Most recently, The Open Group demonstrated its consensus building capabilities by forming and facilitating a FHIM Transition Council (FTC) composed of federal partners and FHIM architects who *unanimously* agreed to a formal Consensus Statement focused on two value propositions supporting an enhanced FHIM.

3) The likelihood of success is high

We are confident The Open Group can successfully steward the FHIM into the future. Upon its transfer to The Open Group, we will publish the FHIM as a copyrighted and trademarked standard of The Open Group. First and foremost, this will keep the FHIM freely available to Federal Partners and accessible by private sector stakeholders. It will also give the FHIM protection from proliferation of different versions of the standard. And, as we do for all of our standards, we will track private sector interest in the FHIM for marketing and business development purposes. (In doing so, we will fill a gap, an understandable one but still a missed opportunity, that existed under federal stewardship.)

Transferring the FHIM to The Open Group is relatively easy. We aim to go beyond transfer *per se* to the achievement of the FHIM's significant potential as a common logical information model for health. What does this mean? In the remainder of this Report, we describe the two key FHIM value propositions agreed to by the FTC. Within these value propositions lies the significant potential of the FHIM. By following the advice of the FTC, The Open Group can steward the FHIM into a highly successful future. We can guide the evolution of the FHIM to become what its supporters have long envisioned: a highly valued and widely used standards-based tool for the advancement of interoperability.

Benefits

The benefits of moving stewardship of the FHIM to The Open Group fall into two general categories:

- 1) Benefits derived from leveraging The Open Group's organizational resources and best practice work processes, developed over more than a quarter-decade as one of the leading global standards development organizations, and
- 2) Benefits derived from the leadership of a respected director with over 30 years of healthcare experience in the public and private sectors

Benefits derived from The Open Group

The Open Group is a global consortium that enables the achievement of business objectives through technology standards. We offer proven, effective methodologies to form and govern standards initiatives and to develop standards and certification programs. We partner with groups to launch and manage programs with credibility and maximum market impact. Our internationally recognized processes provide a commercially and legally sound foundation for

the formation and governance of standards initiatives and special interest groups that accelerate the path to success.

Historically, The Open Group is best known for the unification and ongoing certification of the UNIX® standard. Today, we are a global consortium of more than 625 organizations and more than 60 staff around the world. We operate two US defense-related consortia underwritten by federal and private sector sponsors; ten “horizontal” or cross-industry forums focused on architecture, open process automation, security, managing the business of IT, real-time and embedded systems, and “open platforms” including the cloud, social media, big data and IoT; and two “industry verticals,” including the Healthcare Forum.

The Open Group offers the following benefits:

- Well-established consensus and governance processes for the creation and publication of open standards
- Operation as a voluntary Consensus Standards Body, as set forth in OMB Circular A-119
- Willingness and ability to move to rapid formation of a FHIM Forum with formal collaboration agreements with other SDOs (e.g., HL7)
- Experience with API specifications/standards and with executable standards
- Access to The Open Group ISO/IEC JTC 1 PAS Submitter status for submission of standards to ISO for de jure standardization when appropriate
- Access to a global network of over 625 member organizations to promote understanding and uptake of the FHIM
- Ability to create branded conformance programs to promote and demonstrate market uptake of standards through certified products, people, organizations, and tools
- Recognition of The Open Group brand reputation for openness and vendor neutrality

Leadership in the Healthcare Vertical at The Open Group

Advancing interoperability in healthcare requires knowledge, leadership skills, and broad experience in the healthcare ecosystem. After earning a Ph.D. from the University of Michigan and a brief time in academia, Jason Lee spent a dozen years in the legislative (GAO, CRS, Energy and Commerce Committee) and executive (ASPE) branches of the Federal government. Subsequently, Dr. Lee began to focus on health IT and directed programs at AcademyHealth, NIHCM, NORC, NEHI, and has been with The Open Group since 2014. He has authored multiple articles on healthcare issues in *Health Affairs* and other notable journals. Over the course of his career, Dr. Lee has become known as a bridge builder by creatively reaching across research, policy, and practice domains to make key connections and establish productive collaborations.

Deliverables

The SOW for this Report specifies three main deliverables.

Deliverable 1: Constraints on use of the FHIM

- Describe “[a]ny future membership and licensing constraints placed on the use of FHIM artifacts by federal agencies if transitioned to The Open Group”

There will be no future licensing or membership constraints on the use of the FHIM by federal agencies if it is transitioned to The Open Group. Once the FHIM becomes a standard of The Open Group, federal agencies may freely access it online and may use it for any purpose within and between their agencies.

While membership in The Open Group is not mandatory to access the FHIM standard, opting for membership supports further development of the standard. Members set agendas and work collaboratively. They contribute industry knowledge, best practices, knowledge of existing relevant standards, and expertise in the development of new material that will drive business value. The “transfer-only” agreement produces benefits entirely derived from Member contributions.

Deliverable 2: Convene, facilitate, and synthesize work of FHIM Transition Council (FTC)

- “Form a FHIM Transition Council (FTC), including but not limited to FHIM architects”
- Convene weekly meetings of the FTC, and speak with individual Members as needed
- Charge Members with becoming familiar with The Open Group, anticipating transition issues, and planning for success
- Coordinate the work of the FTC with The Open Group executives and existing members of the Healthcare Forum
- Synthesize the work of the FTC

The FTC was formed and facilitated by The Open Group Healthcare Forum Director.⁴ Two dozen Council Members and guests were selected for their experience, expertise, and knowledge of the FHIM and healthcare standards development more generally. From October 19, 2018 to December 21, 2018, the FTC met weekly nine times. Attendance and participation were excellent. All meetings were recorded. Transcripts, minutes, and syntheses of discussions were produced by The Open Group for the first five meetings. The last four meetings focused on building consensus regarding the best strategies for creating value using the FHIM.

On December 21, 2018, the eleven voting members of the FTC (four federal partner representatives from two primary FHA sponsors and seven FHIM architects) *unanimously*

⁴ A roster of FTC membership is presented in Appendix A.

agreed with two key value propositions for the FHIM. The result is the FTC Consensus Document presented in Appendix B of this Report and quoted below.

First, the FTC agreed that the FHIM should be kept alive, should be kept current to meet the evolving needs of Federal Partners, and that:

FHIM can feasibly be maintained (kept up to date and fit for purpose as new needs evolve) under stewardship of The Open Group.

Second, the FTC agreed that a re-tooled FHIM—one that is easier to use—can help fix one of the most vexing interoperability problems in healthcare today. The problem the Council focused on is the rapidly growing number of FHIR® profiles that cannot be reused without special effort. Essentially, they are one-off or point-to-point interoperability solutions. A retooled FHIM, with an attractive user interface (UI) and hidden UML platform, can be used to create profiles based on a common logical information model. As a result, re-useable profiles can be shared across multiple implementation instances, which would be far more efficient than the prevailing practice today. The FTC generated this idea of a FHIM Profile Builder, and expressed it in an appropriately broader way in its Consensus Document, as follows:

An accessible and easy to use FHIM can be key to the success of interoperability efforts (e.g., Cerner’s implementation work for the VA and DoD, and other public and private interoperability efforts globally).

Deliverable 3: Strategies to maintain and improve the FHIM

- Specify “[s]trategies to accomplish the mission and goal of maintaining and improving the FHIM and expanding its use” by developing a transition plan and an operating plan

We were struck by the hand-in-glove fit between the mission and goal statement “of maintaining and improving the FHIM and expanding its use” and the consensus value propositions agreed to by the FTC. FTC value proposition #1 is to *maintain* and *expand the use* of the FHIM for interested federal partner agencies. FTC value proposition #2 is to *improve* and *expand the use* of the FHIM for developers wishing to building shared standards-based and easily re-useable data profiles. We view this less as coincidence than as coalescence of need, including the need to collaborate to achieve higher aims, such as basic interoperability across healthcare systems.

Strategies

Our strategies to maintain, improve, and expand the use of the FHIM will concentrate on detailed need assessments, relationship building, and collaboration agreements with US and global, public and private, stakeholders. Stakeholders include any organization or association that can benefit from use of the FHIM.

A global extension of the value of the FHIM is new. Our global reach is a unique qualification of The Open Group. Whereas our largest single membership nationality is the United States, the majority of our members are non-US based. With respect to the potential usefulness of the FHIM, we have already established relationships in Germany (Phillips), India (DXC), and Japan (Fujitsu). Our strongest relationship is currently in The Netherlands, where discussions have already begun on how the country might benefit nationwide from the FHIM standard as the common logical information model that corrals diverse detailed clinical models (DCMs), the development of which is nationally subsidized. We also intend to broaden our focus to the UK, Ireland, Finland, and Belgium. The latter, in particular, is relatively advanced in, and receptive to, this effort.

“The intent of broadening the base of support for the FHIM to include international governments and other healthcare organizations would be to attract additional supporters, energy, and funding to evolve the FHIM as outlined in this analysis.”

Transition Plan

The Open Group’s plan to successfully transition the FHIM will begin immediately after the decision is made to transfer the FHIM to The Open Group. We will collaborate with ONC to establish a scope of work and transitional funding to initiate the following transitional and preparatory activities.

- We will conduct an ecosystem-wide market analysis to identify potential members of The Open Group who will advance the FHIM. Our membership-model builds on the fact that forum participation and contribution is greatest when work products benefit members’ organizations
- We will assess needs in federal agencies, including the VA, DoD, HHS, and all other federal partners
- We will prepare documentation and marketing materials to communicate FHIM value propositions to public and private sector needs
- We will arrange meetings with architects from EHR companies, including Cerner, Epic, Medscape, eClinicalWorks, and Athenahealth
- We will continue to work closely with existing members of the HCF at The Open Group, including IBM, Philips, Fujitsu, DXC and Oracle
- We will leverage our existing contacts in other countries (including, The Netherlands, Belgium, Germany, Finland, Japan, Australia)
- We will socialize the FHIM in the developer community (in part, through a collaborative agreement with OSEHRA)

The Open Group has a rich history in the development of mutually beneficial collaborative agreements. For the FHIM transition, we will work with a variety of organizations, starting with HL7 and OSEHRA and extending to HSPC, the Argonaut project, the Sequoia project, eHealth collaboratives, AeHIN (southeast Asia), the Da Vinci project, and others.

Starting in the middle of the transition phase, we will begin operational preparations at The Open Group.

Operating Plan

The Open Group will provide IT, business, and marketing resources to keep the current version of the FHIM online and available to federal partners and other parties of interest. We will host a FHIM Working Group under the Healthcare Forum to take the FHIM through the process of becoming a standard of The Open Group.⁵ This initial, *transfer* part of the operating plan is a highly feasible, low cost, low-risk solution to the pressing issues related to FHIM stewardship.

The bulk of the operating plan focuses on maintaining, enhancing, improving, and expanding the use of the FHIM. Depending on membership interest over time, we will either grow the Working Group established to receive the FHIM and make it a standard, or we will start a new FHIM Forum under the Healthcare Vertical of The Open Group. Either way, we will:

- recruit members
- provide direction and coordination to encourage efficiency of Forum activities
- ensure that The Open Group processes are followed to ensure openness, neutrality, and development and publication of consensus-based work products
- establish collaborative relationships with external organizations
- facilitate weekly Webex meetings and other meetings on an as-needed basis
- plan, organize, and conduct face-to-face meetings at regular intervals⁶

Upon transfer of the FHIM, The Open Group will seek sponsorship funding to support the first FTC value proposition; namely, keeping the FHIM current and up-to-date to meet the evolving needs of Federal Partners. Sponsorship funding will be used to support and manage FHIM architects who are contractually obligated to The Open Group and who can meet the needs of sponsors. (Note: the FHIM architecture team will also be Forum members, but the time and effort required of them under this scope of work will predictably far exceed that of other Forum members.) This period of funding sought under this value proposition will extend as long as the FHIM continues to serve the needs of Forum sponsor members.

Similarly, upon, transfer of the FHIM, The Open Group will seek sponsorship funding to support the second FTC value proposition; namely, to create “an accessible and easy to use FHIM”—a FHIM Profile Builder—that “can be key to the success of interoperability efforts (e.g., Cerner’s implementation work for the VA and DoD, and other public and private interoperability efforts globally).” This sponsorship funding will be used to support and manage FHIM architects who

⁵ The Workgroup will use The Open Group’s proven Standards Process for review, approval, and publication of standards. See <http://www.opengroup.org/standardsprocess/>

⁶ We may co-locate face-to-face meetings with collaborators and/or hold them at The Open Group’s quarterly Events.

will be contractually obligated to The Open Group to complete this scope of work. This period of sponsorship will be limited to an estimated 2-3 years.

We cannot, at this early (pre-transition, pre-transfer) stage, specify a precise cost/governance structure for a FHIM Working Group or Forum. This is because we have not yet assessed the level of interest among Federal Partner agencies that have come to depend on the FHIM. We will start these conversations as a key part of the transition plan. Furthermore, only upon transfer can we begin to discuss sponsorship interests among Federal Partner agencies.

By precedent, sponsorship fees at The Open Group can take the form of higher annual membership payments (and rights), or contractual arrangements, much like the one that paid for the work performed for this Report.

It bears repeating that the federal partners will pay nothing to continue to access the current FHIM once it is transferred to The Open Group. Moreover, the Forum membership cost for federal agencies over 200 employees is \$7,500 per year. Finally, while the cost of Forum sponsorship is currently unknown, it is very likely to be less than the cost of supporting the FHIM within the federal government.

Conclusion

We appreciate having this opportunity to demonstrate why it is important to allow the FHIM to continue into the future. An FTC made up of diverse stakeholders and experts unanimously agreed on two value proposition that can increase the use and usefulness of the FHIM. We believe that The Open Group is the right choice for stewardship of the FHIM. We look forward to responding to any questions you may have.

Appendix A. Roster of FHIM Transition Council (FTC) Members

Voting Members:

Robert Bishop	Veterans Health Administration
Nona Hall	Department of Defense
Stephen Hufnagel	Apprio, Inc.
Alberto Llanes	Anthem
Jay Lyle	JP Systems
Robert McClure, MD	MD Partners, Inc
Galen Mulrooney	JP Systems, Inc
Sean Muir	JKM Software, LLC
Nancy Orvis	Department of Defense
Ken Rubin	Veterans Health Administration
Steven Wagner	SWIT Consulting
Michael van der Zel	UMCG, Netherlands

FHA Consultants

Marco DeMarco	Iris Health Solutions
John Forrester	Iris Health Solutions
Brian Handspicker	Iris Health Solutions
Caitlin Ryan	Iris Health Solutions

Guests

Bo Dagnall	Perspecta
------------	-----------

The Open Group Staff

Amanda Bonin (Forum Coordinator)
Judy Cerenzia (FACE/SOSA Forum Director)
Steve Borchert (Director of Bus Dev)
Jim Hietala (VP Bus Dev)
Jason Lee (Facilitator, Healthcare Forum Director)
David Lounsbury (CTO)

ONC Directors

Avinash Shanbhag
Sherilyn Pruitt

Appendix B. The FTC Consensus Document

CONSENSUS STATEMENT OF THE FHIM TRANSITION COUNCIL* (FTC): 12/21/18

The undersigned Members of the FHIM Transition Council agree that:

1. The FHA program will sunset by September 2019. One valuable initiative that needs to be transitioned is the FHIM.
 - 1.1. The FTC strongly believes a new home is needed for the FHIM by Sept 2019.
 - 1.2. A formal assessment is needed to determine commitment to providing financial support for the FHIM after FHA sunsets.
 - 1.3. FHIM can feasibly be maintained (kept up to date and fit for purpose as new needs evolve) under stewardship of The Open Group.
2. One of the highest value propositions for the FHIM lies in its ability to assist developers and clinical stakeholders by building re-useable (without special effort) interoperability components (e.g., FHIR profiles).
 - 2.1. Enhance FHIM to be more accessible, easier to use, and improve access to its content, (e.g., as a FHIR profile builder).
 - 2.1.1. FHIR is immensely popular, in large part because it is easy to use and solves the data transfer problem in interoperability.
 - 2.1.2. However, FHIR, by design, does not ensure that health data that is meaningfully shared in one implementation instance can be meaningfully shared in any other implementations.
 - 2.1.3. As a result, the widespread adoption of FHIR is producing thousands of profiles that cannot be reused without special effort.
 - 2.1.4. A FHIM profile builder would assist the FHIR community by producing reusable, standard based profiles, and thereby help significantly advance interoperability.
 - 2.2. An accessible and easy to use FHIM can be key to the success of interoperability efforts (e.g., Cerner's implementation work for the VA and DoD, and other public and private interoperability efforts globally).

*The FHIM Transition Council was convened by The Open Group (www.opengroup.org) under subcontract to ONC, HHSP233201500019C, to analyze the feasibility and benefits of transferring the FHIM to The Open Group no later than FY2020.

About this Consensus Document

The FTC was convened by The Open Group to perform the functions described below (for HHSP2333201500019C, the “Prime Contract.”)

Description of the scope of work

This subcontract is for FHIM transition planning. The scope of work is to evaluate the feasibility and benefits of moving the stewardship of the Federal Health Information Model (FHIM) program to The Open Group’s Healthcare Forum (HCF) when the ONC’s management of the Federal Health Architecture (FHA) initiative terminates at the end of Fiscal Year 2019. A FHIM Transition Council will be formed and will meet weekly, at least, under the direction of the HCF Director. The FTC will become familiar with The Open Group and the HCF, will discuss anticipated transition issues, and will plan for success. The Open Group will produce materials for presentation to the FHA Managing/Governing Boards in January, 2019.

This consensus document is a statement of *unanimous agreement* among the voting members of the FHIM Transition Council. Institutional affiliation is provided for informational purposes only. The views of the signatories reflect their own professional opinion and do not represent formal endorsement of their professional affiliations.

<i>Robert Bishop</i>	<i>Veterans Health Administration</i>
<i>Nona Hall</i>	<i>Department of Defense</i>
<i>Stephen Hufnagel</i>	<i>Apprio, Inc.</i>
<i>Alberto Llanes</i>	<i>Anthem</i>
<i>Jay Lyle</i>	<i>JP Systems</i>
<i>Robert McClure, MD</i>	<i>MD Partners, Inc</i>
<i>Galen Mulrooney</i>	<i>JP Systems, Inc</i>
<i>Sean Muir</i>	<i>JKM Software, LLC</i>
<i>Nancy Orvis</i>	<i>Department of Defense</i>
<i>Ken Rubin</i>	<i>Veterans Health Administration</i>
<i>Steven Wagner</i>	<i>SWIT Consulting</i>
<i>Michael van der Zel</i>	<i>UMCG, Netherlands</i>