Unified Terminology Governance (UTG) Rollout and Implementation Plan
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## REVISION HISTORY

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<tr>
<th>Version Number</th>
<th>Date of Issue</th>
<th>Author(s)</th>
<th>Brief Description of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version 1.0</td>
<td>September 18, 2019</td>
<td>Jessica Snell</td>
<td>Initial document for review and approval</td>
</tr>
</tbody>
</table>
INTRODUCTION

The purpose of the implementation plan is to communicate the approach for 1) sunsetting the current HL7 terminology harmonization process and 2) going live with the Unified Terminology Governance (UTG) process for HL7 Terminology harmonization.

Current Harmonization Process

HL7 currently maintains terminology assets for multiple HL7 product lines (v2, v3, CDA and FHIR), but does not currently have a uniform vocabulary governance process or strategy. Ongoing maintenance of these terminologies is resource intensive and is also quite opaque to much of the community. As FHIR and associated implementation guides (IGs) become more popular and as HL7 continues to grow, the inability for current processes and tools to scale is becoming a critical issue. There is a need to maintain the terminologies that support all of HL7’s products in a way that is responsive and improves quality while reducing the resources that both HL7 and its volunteers must put into the process. As well, there’s a need for the process to align with the community’s expectations for a more modern, continuous peer-feedback driven process.

There is currently no single datastore for all of the HL7 terminology. Version 2 is maintained in a Microsoft Access database, CDA terminology is maintained in Trifolia, V3 terminology is maintained in the coremif and MSAccess java-based tooling used in the publication preparation processes, and FHIR terminology is maintained as FHIR codeSystem and valueSet resources in the FHIR database.

Currently, harmonization change proposals are submitted in various formats including Word documents, subversion (SVN) and gForge tickets. A variety of tools (mostly heavy use of text editors) are used to create requests for changes to the HL7 Terminology. A substantial amount of resources are used to validate proposals, correct errors and incompleteness, prepare them to be reviewed by a consensus group and to be consumed by tooling which can apply the approved changes to the terminology for use in HL7 products and downstream IGs.

UTG Harmonization Process

The UTG process will replace the existing vocabulary maintenance processes (including harmonization) for HL7-maintained terminology across all HL7 project lines.

The UTG process allows a submitter to create the terminology that he or she wishes as a result of their proposal, rather than describing it in a way that can be thought of as a delta to the existing content. At a high level, the steps are as follows:

1. Extraction of Terminology from the UTG Source of Truth (GitHub)
2. Editing Terminology to produce a view of what is desired as the end state
3. Systematic committing of the proposed changes (GitHub branch), applied by tooling with minimal manual intervention to apply the change (if it is endorsed)

The UTG process will bypass the most laborious and expensive part of the current harmonization processes.

The terminology proposal will go through defined workflow states and quality assurance checks from submission to implementation. The workflow transitions are mediated by tooling, enforcing restrictions in the path from state to state. Some transitions are manually performed by the Terminology Curator based on documented rules.

The UTG process and tooling will support the creation of a proposal queue whose content must be applied to the Source of Truth to update the Terminology and instantiate the requested changes. The UTG process minimizes the resource requirement for this by having the submitter utilize the editing tools to create the content in a GitHub branch which can be applied to the UTG Source of Truth. Notifications will be sent so that the submitter (or other interested parties) are kept aware of the progress of their proposal.

The diagram below provides a high-level view of the UTG process architecture.
Risks
The known risks for implementing the UTG process in the current timeline are:

1. Majority of testing resources are volunteers, so testing is dependent on their schedule
2. Testing, as designed to surface gaps, can lead to new functionality requests
3. Possible push back from the HL7 community about learning and utilizing a new harmonization process
4. Naming Systems are currently at maturity level 1 and may undergo significant changes as it goes through the maturity model

Assumptions
The assumptions for implementing the UTG process within the current timeline are:

1. No new major development items are requested
2. Signoff received from the Technical Steering Committee (TSC) and Executive Committee (EC) in appropriate timeframe
3. Key resources are available for implementation and rollout

MANAGEMENT OVERVIEW
This section describes the resources, tasks and schedule for the rollout of the UTG project.

Implementing the UTG project for production use (to replace the current harmonization process) will require coordination between different groups and resources to complete the tasks in the given timeline.

Points-of-Contact
This section lists the main contacts that will be involved in the rollout of the UTG project.

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Lead</td>
<td>Ted Klein</td>
<td><a href="mailto:ted@tklein.com">ted@tklein.com</a></td>
</tr>
<tr>
<td>Project Manager</td>
<td>Jessica Bota</td>
<td>jбота@апелон.com</td>
</tr>
<tr>
<td>Jira and Confluence Admin</td>
<td>Josh Procious</td>
<td><a href="mailto:joshua@hl7.org">joshua@hl7.org</a></td>
</tr>
<tr>
<td>Network Architect</td>
<td>David Johnson</td>
<td><a href="mailto:davidj@hl7.org">davidj@hl7.org</a></td>
</tr>
</tbody>
</table>

Tasks
This section lists the tasks that are required to rollout the UTG project. These tasks are also organized in the Schedule section below.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
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<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review UTG Documentation</td>
<td>The documentation requires complete review prior to rollout. Many instructions refer to development environments and must point to production environments once migrated.</td>
</tr>
<tr>
<td>Perform System Testing</td>
<td>The UTG processes and tooling must be fully tested and the results need to be sent to the Chief Technology Officer (CTO) and the TSC.</td>
</tr>
<tr>
<td>Review Educational Materials</td>
<td>Educational materials need to be available to help walk proposers through the submission process. A video example will help guide proposal submitters through the process. Educational paths for each group (submitters and reviewers) should be clearly laid out.</td>
</tr>
<tr>
<td>Deploy Jira UTG Production Environment</td>
<td>The Jira UTG project is currently hosted on the HL7 Jira development environment. It needs to be migrated to the HL7 Jira production environment.</td>
</tr>
<tr>
<td>Identify and Configure Oversight Persons</td>
<td>Discussions need to be held with management groups to identify Oversight voters. Oversight voters will be configured in Jira.</td>
</tr>
<tr>
<td>Define Terminology Curator</td>
<td>The Terminology Curator will be responsible for managing the proposed terminology changes.</td>
</tr>
<tr>
<td>Migrate IG Rendered Content Pages</td>
<td>The IG for UTG content is currently located at <a href="https://build.fhir.org/ig/HL7/UTG/">https://build.fhir.org/ig/HL7/UTG/</a> and needs to be migrated to <a href="http://terminology.hl7.org">http://terminology.hl7.org</a>.</td>
</tr>
<tr>
<td>Migrate IG Rendered Proposal Content Pages</td>
<td>IG pages based on rendered content are still in development but will need to be in production to go live.</td>
</tr>
<tr>
<td>Complete Final Generation of UTG Resources</td>
<td>The UTG Source of Truth is being built from various sources (Coremif, mdb, etc.) but will no longer use those inputs after UTG goes live. One final generation of resources must be created as the officiate UTG Source of Truth moving forward.</td>
</tr>
<tr>
<td>Stand up HL7 Servers</td>
<td>The UTG servers need to be accessible and include release pages, archives, snapshots, and links to tooling.</td>
</tr>
<tr>
<td>Turn on Notifications</td>
<td>Official notifications need to be enabled so that those on the harmonization list serv are notified of proposals and outcomes.</td>
</tr>
<tr>
<td>Notification of GO LIVE</td>
<td>All HL7 Vocabulary Working Groups and the HL7 community need to be notified of harmonization process changes and how to find supporting materials.</td>
</tr>
<tr>
<td>TSC and EC Signoff</td>
<td>Final signoff must be received from these two groups before going live.</td>
</tr>
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</table>
Schedule
The UTG project is on schedule to go live in early 2020. There are four buckets of requirements (tasks are described above) that must be completed to rollout the UTG project for HL7 Terminology maintenance.

- Preparation Requirements
  - Review UTG Documentation
  - Review Educational Materials
  - Perform System Testing
  - TSC and EC Signoff
- Staffing and Participant Requirements
  - Identify Oversight Persons
  - Define Terminology Curator
- Migration to Production Requirements
  - Complete Final Generation of UTG Resources
  - Deploy Jira UTG Production Environment
  - Migrate IG Rendered Content Pages
  - Migrate IG Rendered Proposal Content Pages
  - Stand up HL7 Servers
  - Turn on Notifications
- Notify HL7 Community
  - Notification of GO LIVE

IMPLEMENTATION SUPPORT
This section describes the tooling, documentation, and personnel required for implementing UTG as the production process for HL7 Terminology harmonization.

Tooling
The UTG process requires utilization of HL7-hosted servers as well as tooling installed on the proposal submitter's machine. Many of the servers will require migration to a production environment prior to going live. The requirements that must be in place are listed below.

Server Requirements:

1. JIRA Development environment configured for UTG project
   (https://jiradev.hl7.org/projects/UP/issues)
2. Bitbucket Repository (intermediary repository)
   (https://bitbucket.hl7.org/projects/UTG)
3. GitHub Repository (official repository)
   (https://github.com/HL7/UTG/)
4. IG Publisher for rendering of UTG content
   (https://build.fhir.org/ig/HL7/UTG/)
5. UTG Confluence Page for project information and documentation
   (https://confluence.hl7.org/display/VOC/Unified+Terminology+Governance+Project+%28UTG%29+Page)
6. IG Publisher for rendering of UTG proposed content –
IMPLEMENTATION IN PROGRESS

User Requirements:

1. PC or Mac with Internet access
2. Sourcetree application v3.1.3
3. Vocab Server application v0.0.6
4. FHIR Toolkit application v0.0.58

All tooling requirements will be tested during the UTG System Test cycle prior to rollout. A System Test report summarizing the outcome of testing will be sent to the CTO and TSC.

Documentation
All documentation related to environment setup, submitting a proposal, and voting needs to be complete before production rollout. This will continue to be an iterative process as improvements are made and new functionality is developed. The documentation will be reviewed during the UTG System Test cycle to ensure that it provides clear and correct information.

Personnel
Maintenance and publishing of Terminology in a high-quality way is widely recognized as a complex undertaking. The UTG process and tools to support it was designed to minimize the need of a dedicated resource to oversee the process, address issues and problems, and manually fill in areas where tooling is insufficient or impossible to create (such as value judgements on whether or not descriptions are of high enough quality for HL7 Standards). With sufficient tooling support, effort to maintain HL7 Terminology cross all product families should be able to be limited to a part-time resource with approximately the same time/effort currently consumed by the current V3/V2 Harmonization process. Utilization of an existing subject matter expert familiar with the current and future harmonization process will accelerate the production role out, eliminating the immediate need to hire and train a new resource. However, it should be noted that knowledge transfer and training of additional resources, to mitigate single point of failure risk, is advised.

Outstanding Issues
The UTG publication process is currently in the design phase and is scheduled to be implemented by the end of 2019. This is the final major piece of UTG functionality that needs to be addressed prior to going live with the UTG project for HL7 Terminology maintenance. Tasks and timelines related to this work will be updated in the project plan but are not expected to affect the target rollout date of early 2020.
ACCEPTANCE CRITERIA

The UTG project must pass certain acceptance criteria prior to rolling out UTG for HL7 Terminology harmonization. After all development tasks are complete, UTG will undergo System Testing. Results of the System Test will be reviewed by the Technical Lead and Project Manager and cleanup of any issues will be addressed. A report on the results of the System Test will then be sent to the HL7 CTO and TSC.

Once the project is approved by the CTO and TSC, the EC will make the final decision on rolling out the UTG project for HL7 Terminology maintenance.

SUMMARY

This document describes the process for implementing and rolling out the UTG project for HL7 Terminology maintenance to replace the current harmonization process. It defines the tasks, resources, and schedule required to successfully implement the UTG project for production use. It also gives an overview of the tooling, documentation, personnel, and outstanding issues required to successfully roll out UTG. This document will be periodically updated as the project moves closer to implementation.