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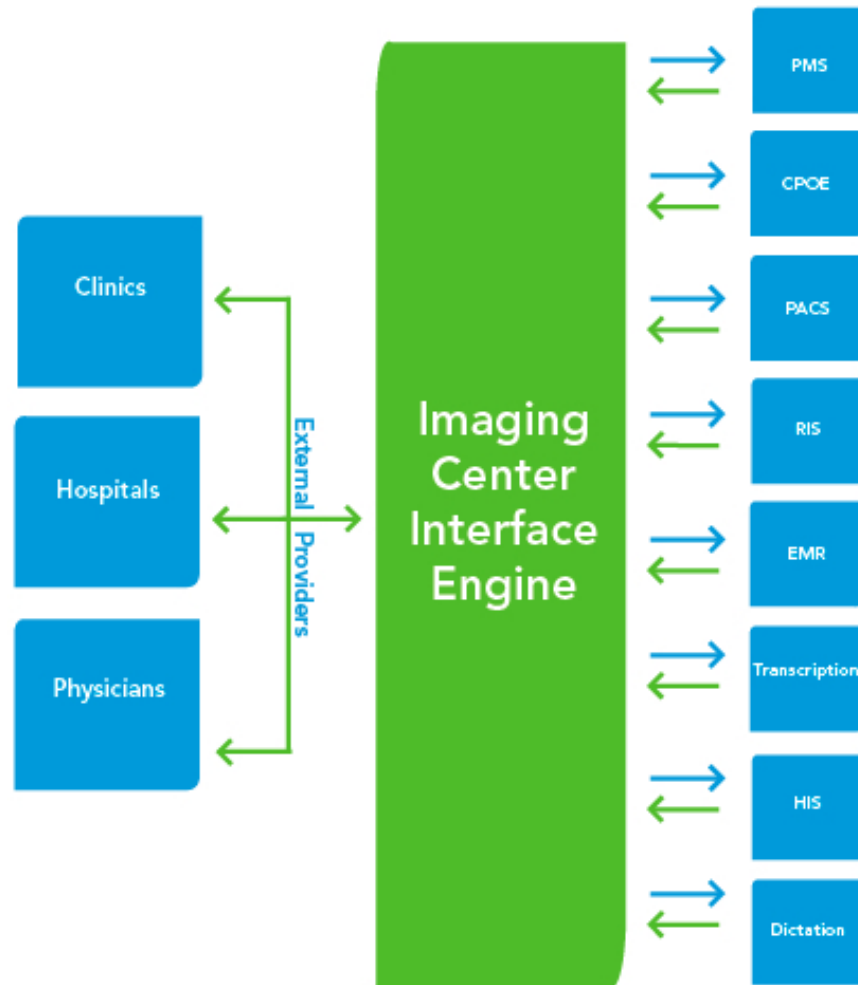
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WHITE PAPER

Interfacing Insights for Imaging Centers

Supporting Each Stage of an HL7 Project with the Right
Approach

Imaging center interface projects can be challenging and rewarding. Projects are challenging due to the flexibility of the HL7 standard and the need to work with multiple parties, but they are rewarding when all clinical applications are exchanging data effectively. The end result is streamlined processing of clinical data through an imaging center's application environment (see Illustration below).



Interoperability becomes one of the key objectives for an imaging center. Connecting healthcare applications can improve the experience of multiple constituencies. For example:

- The **patient** experience is enhanced with faster processing and communications of key clinical information while accuracy in the communication of required tests and results is ensured through software tools.
- The **imaging center** experience is enhanced through more efficient operations both internally and externally – reduced cycle time in

- The experience of an imaging center’s key partners – **physicians, clinics, and hospitals** – is enhanced through a more effective means to receive patient orders and deliver patient results.

Consequently, an HL7 interoperability initiative is an important endeavor which benefits all entities within an imaging center network. Pursuing the project in a well-planned manner and ensuring the selected interface solution supports each project stage are critical.

Stages of an HL7 Interfacing Project

To achieve the best result in an [HL7 interface](#) initiative, there are several stages an interfacing project will undergo.

Healthcare Interfacing Project Stages:



Outlined below are key points in each stage of interface development and support.

Stage	Key Points
<p>Developing HL7 interfaces</p>	<p>Undertake a business analysis and departmental workflow review for the imaging center environment</p> <p>Review specifications and analyze gaps between application data support and the specifications</p> <p>Define each imaging center’s application’s data requirements</p> <p>Identify the unique characteristics of the HL7 versions used by your interface partners (e.g., physician’s EMRs, clinics, hospitals, etc.)</p> <p>Accommodate the ‘custom’ HL7 definitions by defining the parsing rules needed for each partner (e.g., Z segments)</p> <p>Translate the interface messages between HL7 versions</p> <p>Build the communications level connections for the HL7 conversation</p>
<p>Testing HL7 interfaces</p>	<p>Collect message samples for interface unit testing</p> <p>Check the sample messages for validation and conformance to the selected version of the HL7 standard and required customizations made before implementing</p> <p>Unit test message translations</p> <p>Test the protocol connection to ensure the HL7 message can be delivered effectively</p> <p>Send defined messages to the destination application to ensure acknowledgement processing</p> <p>Execute a system test of the interface</p>
<p>Deploying</p>	<p>Document the interfaces that have been built</p>

Stage	Key Points
HL7 interfaces	<p>and tested</p> <p>Backup production environment</p> <p>Port the testing environment including all pieces of the configuration to production</p> <p>Test production setup and configuration without impacting production environments</p> <p>Start connections for productive use</p>
Maintaining the integration	<p>Monitor interface connections to ensure uptime and consistent message flow</p> <p>Examine performance statistics for each interface connection</p> <p>Establish interface control to easily start and stop interface connections</p> <p>Establish a practice of archiving interface messages for long term review and research</p> <p>Set baseline message volume flow expectations to implement benchmark metrics</p> <p>Create an alerting profile for proactive notification of severe interface events</p>

Using the points above will help facilitate a more productive approach to interfacing projects and raise the likelihood for success with the budgeted funds.

Imaging Center Interfacing Engine Considerations

When undertaking an interfacing project, evaluating and purchasing a healthcare communications or [interface engine](#) may be included in the effort. While there are several healthcare interfacing engines on the market today, each imaging center will find the one that best meets their requirements with a few simple steps. As you evaluate options, several considerations need to be made. We have grouped these considerations in the interfacing project stages outlined below:

Developing HL7 interfaces

- Does the engine include specifications to all published HL7 releases in use today? This feature will make it extremely easy to design, deploy and document interfaces.
- Is it flexible in the way it allows you to modify HL7 standards, as required, in meeting defined requirements?
- How does it handle "one-off" details such as "Z" segments?
- If you need database interaction, does it have deep database interaction to allow users to read, write, query, or update a database?
- What capability does it provide to act on input message(s) to produce needed output message(s) for selected external entities?
- Are connections built quickly and easily through a wizard or is scripting involved?

Testing HL7 interfaces

- Unit-Testing
 - How does the engine provide the ability to test sample messages for conformance against defined changes to the HL7 standard?
 - Does it have the ability to simulate an application or external entity by queuing messages to configured connections?
 - How do developers test messages thoroughly and can they do so without involving an application or external entity until ready to engage?
 - What are its capabilities to test message transformation and complex logic for filtering, mapping, and routing?
- Integration Testing
 - What level of detailed activity logging and other key information is provided for each interface when testing with an application or external entity?
 - How easy is it to view message information to understand where changes need to occur?
 - What is involved when there is a need to quickly edit messages and resend them with amended data?

Deploying HL7 interfaces

- How does the engine document interface configurations that are designed for productive use?
- How are components built in a test environment and then how are they ported to production?
- What tools are provided to verify accuracy of a developed interface once ported?
- Is the user interface a click and drag technology for quick deployment or is a scripting language required?

Maintaining the integration

- Does the engine guarantee message delivery – first in, first out?
- Is the logging module effective and does it take the guesswork out of maintenance and support?
- Are the alerts user-defined and are they flexible enough to support a broad range of options to accommodate for peak workflows?
- Does the monitoring allow one to quickly view connection status and statistics at a glance?
- With an efficient project plan and the right interfacing solutions, HL7 projects can be simplified and desired results can be achieved at a reasonable cost.

Summary

Today, the rallying call is for “Connected Healthcare” which translates into an interoperability imperative for imaging centers. Pursuing this goal provides many benefits to various constituencies who interact with an imaging center. To ensure success, a thoughtful plan should be developed to facilitate the work, and an interface solution needs to be selected that supports each stage in the plan.

There is an old adage about starting a new project. It is *Plan the Work, and Work the Plan*. Supporting this adage must be the right solution so that the second half – *Work the Plan* – can be more productive and successful

About Corepoint Health

Corepoint Health solutions deliver interoperability for healthcare organizations and simplify the complexities of healthcare data through practical software applications, consulting and training. Our innovative and proven software solutions leverage clinical data flow efficiently for a diverse group of healthcare entities including hospitals, imaging centers, laboratories, clinics and healthcare vendors. This next generation approach to healthcare data and streamlined workflow is where Corepoint Health specializes in helping customers discover the power of integration.

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