

Interoperability Toolkit Overview

For the Supplier community

What is ITK Release 2.1?

Interoperability Toolkit (ITK) – What is it?

- A set of common specifications, frameworks and implementation guides to support interoperability within local organisations and across local health and social care communities
- NOT a piece of software
- Targeted at reducing complexity and therefore expenditure by introducing a unified specification for system interoperability within the English NHS
- Uses open international standards and is aligned with HL7 and 'Integrating the Healthcare Enterprise' (IHE)
- Conformance is offered which means that the system supplier has proven that a product has been developed to and tested against the ITK specifications.

ITK for Local Interoperable Solutions

Interoperability Toolkit (ITK) launched in 2010

XML, HL7, Web Services (SOAP), IHE ADT profiles....

National Specifications using HL7 at the heart

Focused on the push pattern to date

Interoperability Model: Technical Level (explicit), Logical Level (partly), Application level (guidance)

ITK Conformance forms part of the offering

ITK Specification Set

Infrastructure

Web Service

DTS

TMS

Birth Notifications

HL7v2 ADT

Clinical Dashboards

HSCI

HPEN

Child Screening

Telehealth

Spine Mini Services
(PDS, SCR, CPIS)

111

eDischarge

Discharge

Ambulance

Outpatient

Out of Hours

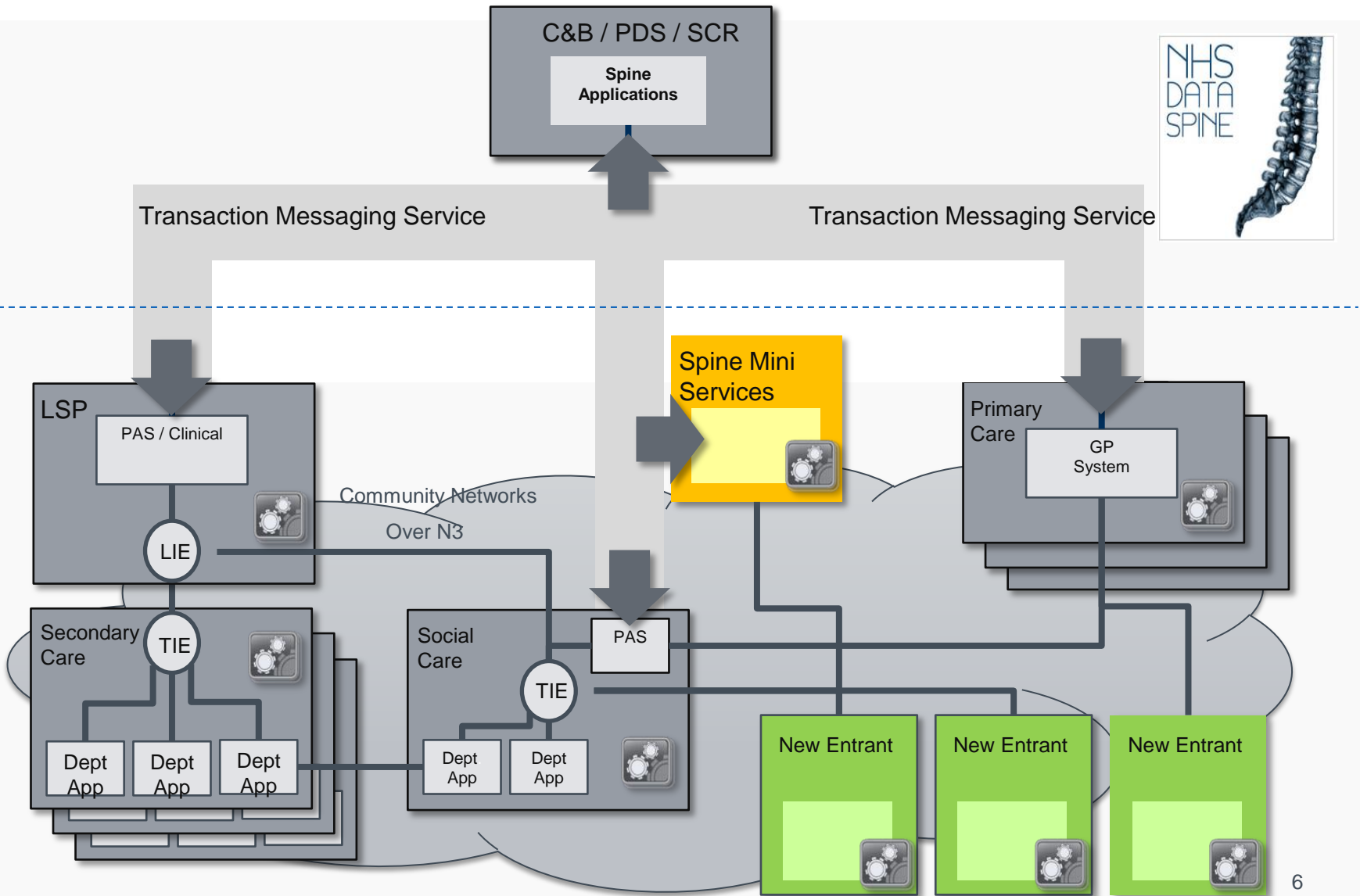
Emergency Dept

Non-Coded

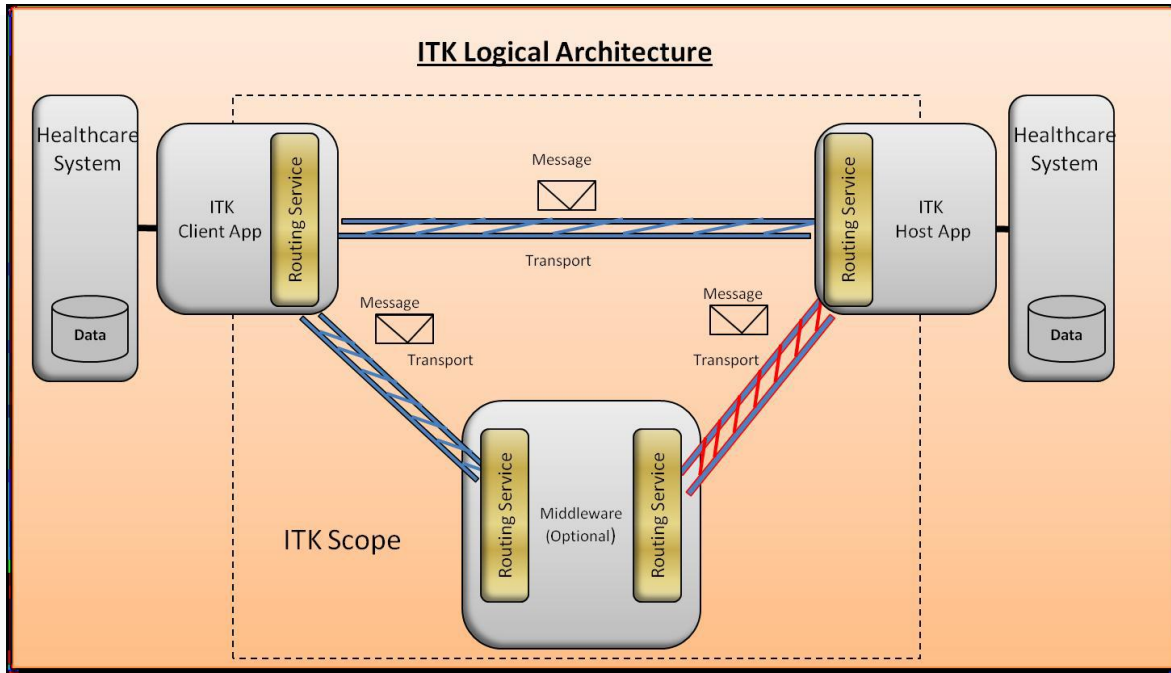
Self-Certified Requirements and Trust Operating Model

Dec 2015: Currently Published on TRUD but moving to <http://developer.nhs.uk/>

Connecting with ITK



ITK – What is my ITK System Type?



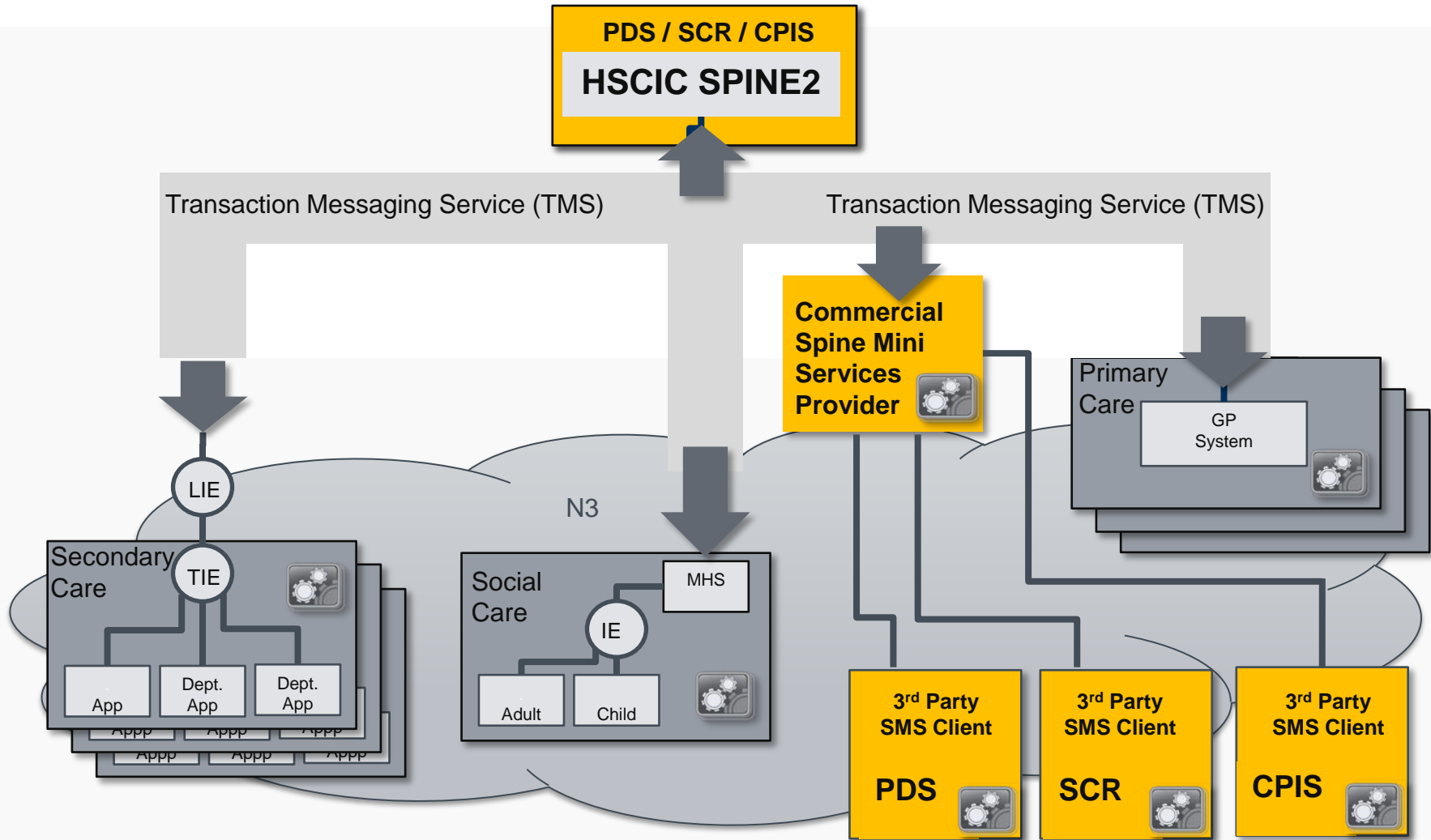
- **ITK Client Application** - responsible for creating the ITK Compliant Message
- **ITK Host Application** - responsible for consuming the ITK Compliant Message
- **ITK Middleware** - responsible for message routing, transformation, mediation, orchestration etc.

ITK – Is my product applicable?

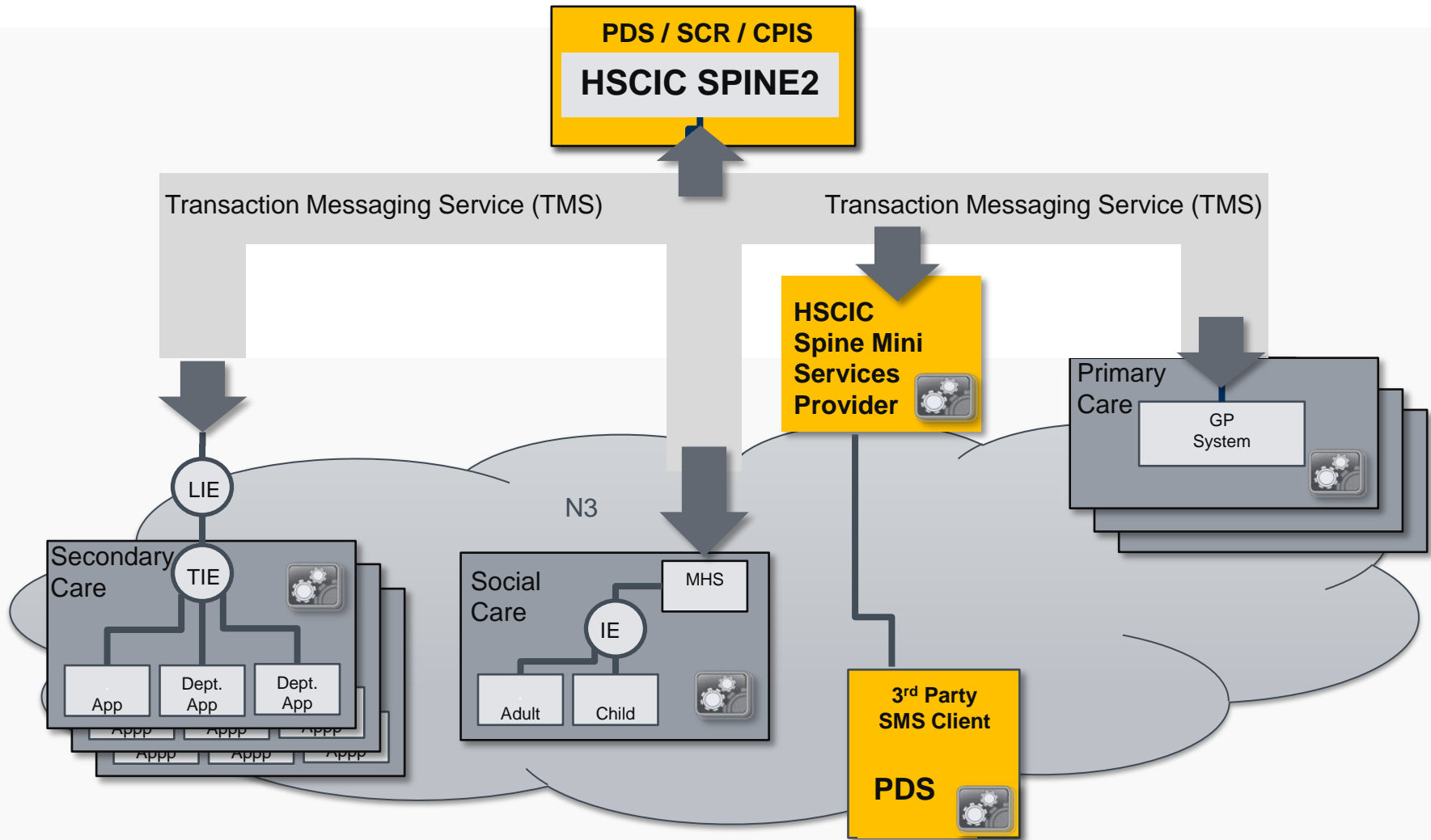
- ITK has been focussed on the business needs of the front-line NHS and Social Care providers
- Specifications have been developed as a result of consultation with the NHS / Social Care IT leads and engagement with representatives of the clinical community
- Only projects which are of direct and measurable benefit to the NHS front line and Social Care services are considered for inclusion in the ITK.
- A list of services currently available for ITK Interface Conformance are embedded within the conformance pack.
- If your product currently processes information any of the messages detailed in this worksheet then your product is applicable for ITK and Conformance and you should continue with this slide deck
- If your product does not process any of the messages detailed but you feel that there is an opportunity for your message to be incorporated, please contact the Interoperability Team.

ITK Spine Mini Services

Spine Mini-Services Landscape (3rd Party)



Spine Mini-Services Landscape (NS Digital)



ITK Specifications

ITK Specifications on TRUD

The ITK specifications are published on TRUD (Technology Reference data Update Distribution).

Link:

<http://www.uktcregistration.nss.cfh.nhs.uk/trud3/user/guest/group/0/home>

TRUD contains many documents, follow these steps as a starting point:

- Register and create a TRUD account
- From the TRUD Home Page, under 'Collections', select the 'Interoperability Framework'
- Under 'Downloads', select the 'Interoperability Toolkit'
- Download the following 4 Items – ITK Architecture, ITK Core, ITK Trust Operating Model and ITK Conformance

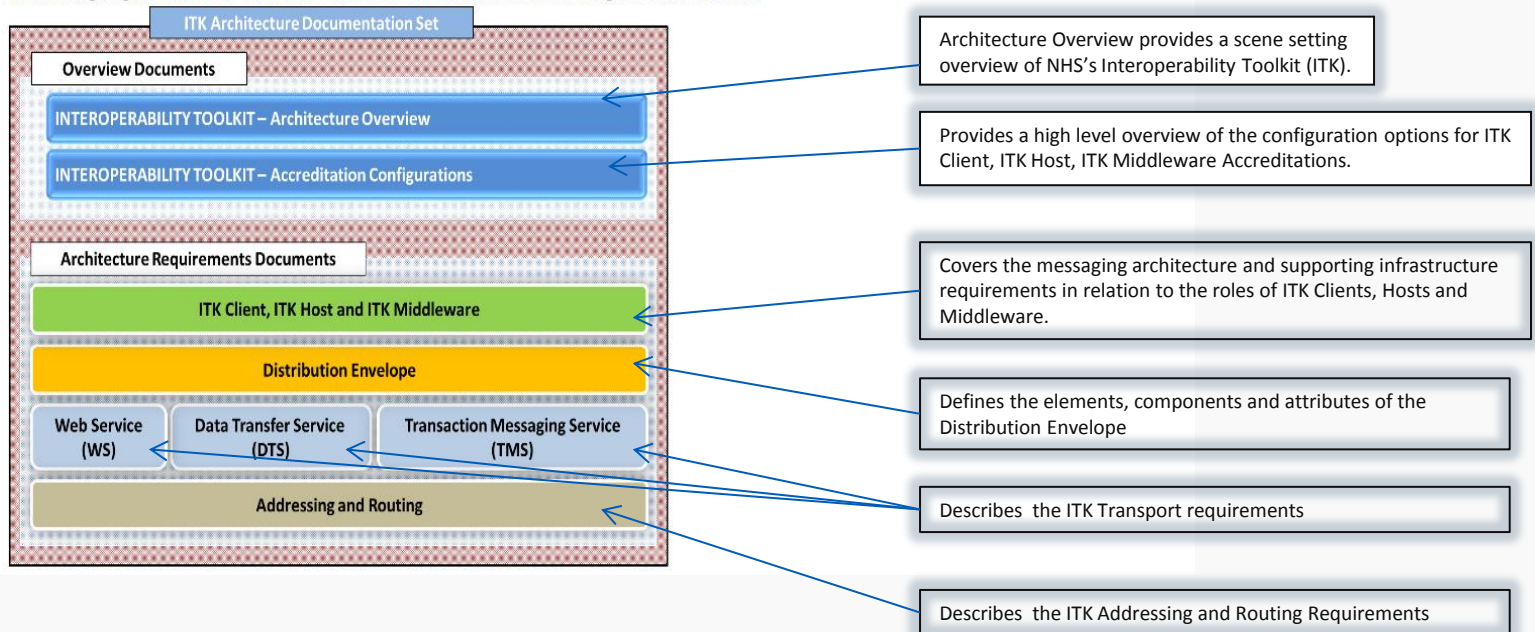
The following slides provide a quick overview of key information contained within the first 3 packs mentioned above. More detailed information about the ITK Conformance Pack is contained in the next section

ITK Architecture Pack on TRUD

ITK Architecture Documentation - Overview

ITK 2.0 Architecture Documentation Set has been re-organised and re-written to make it simple and easy to understand. This set is intended for a mixed technical audience of individuals within an organisation of all levels intending to develop ITK Accredited Systems, as well as those in the Health and Social Care Architecture communities.

The following diagram shows how the new set of Architecture Documents have been organised and classified.

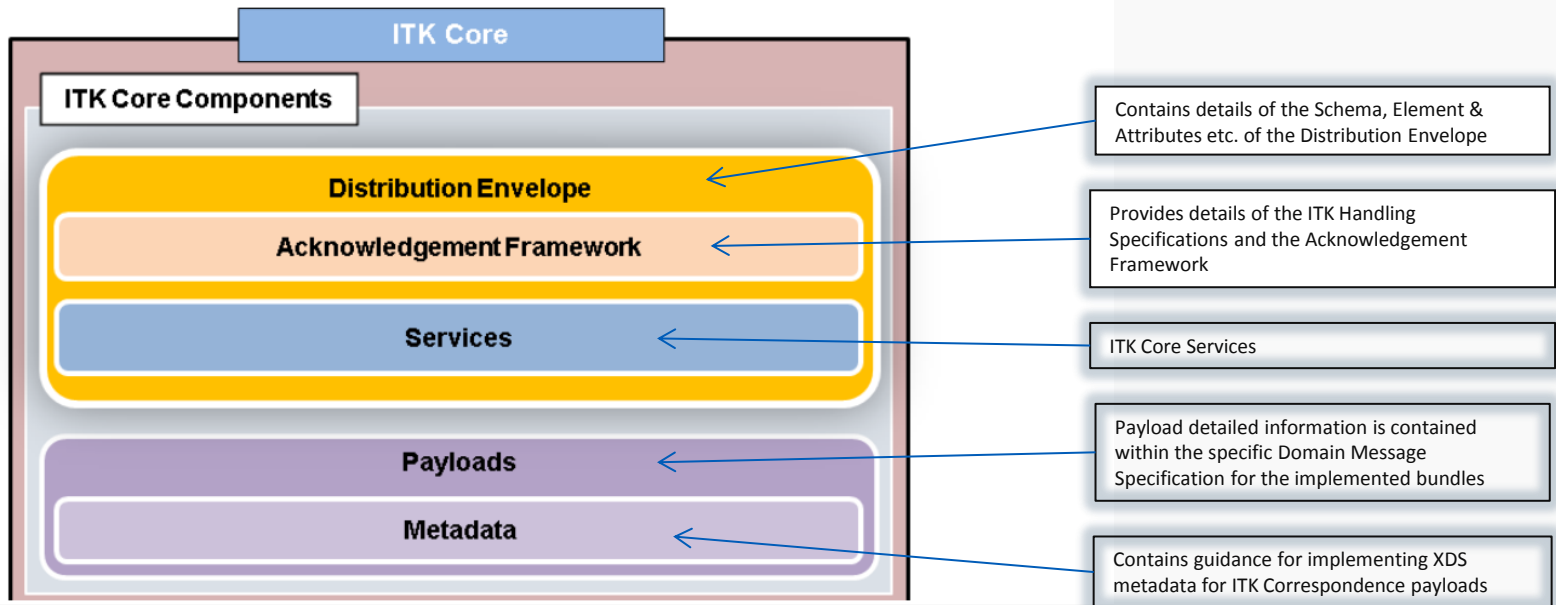


ITK Core Pack on TRUD

About

Overview: Core

The Interoperability Toolkit (ITK) Core pack offers guidance on common (or Core) ITK artefacts and concepts, backed up by examples and development artefacts such as XML schema.

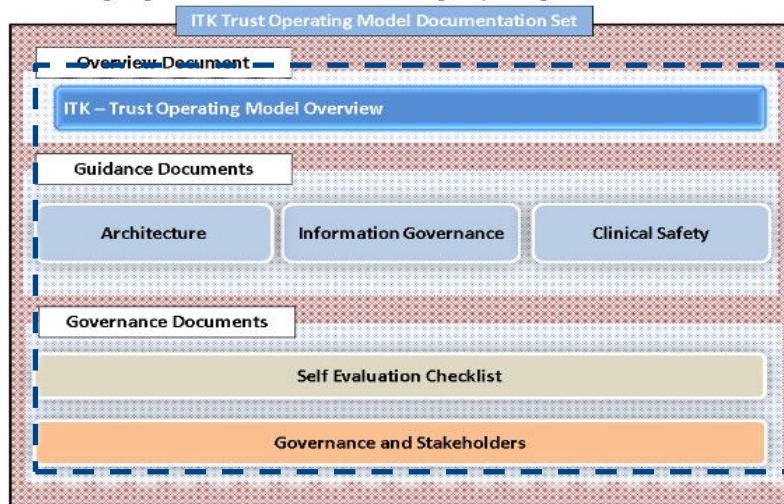


Target Operating Model

Target Operating Model : About

Trust Operating Model is an integral part of the Interoperability Toolkit. It explains the move that this Operating Model makes towards greater Trust responsibility for the decision to connect Locally Assured Systems to NHS Spine Compliant Systems and / or each other.

The following diagram shows how the new set of Target Operating Model Documentations have been organised and classified.



These documents are intended for implementing trusts. They provide guidance/check lists on how to assure a supplier product.

The primary audience for the Trust Operating Model is project teams within a Trust who are responsible for Interoperability. Suppliers are envisaged as a secondary audience for the Trust Operating Model documentation. Within a Trust, the Project Manager and technical team will find the entire document set relevant. Other experts may wish to consult specific topics based on their specialty (e.g. Architecture, Information Governance, and Clinical Safety). Senior Management will find this overview document the most relevant, but may also wish to familiarise themselves with the additional information on Governance and Stakeholders.

ITK Conformance

ITK Conformance Overview

- **Suitably Light Weight**
 - Assurance approach appropriate
 - Focus on messaging interface
- **Supplier Certified Requirements Coverage Pack**
 - Designed to help understand scope
 - Central artefact for all ITK Conformance submissions
 - Useful documents provided within pack as links
- **Toolkit Workbench (TKW) - Out the box test solution**
 - Out the box test solution
 - Easily deployable
 - Provides test and development support
- **Collaborative**
 - ITK Conformance Team will provide assistance
 - Experienced, know the pitfalls, offer guidance

ITK Conformance Scope

ITK Conformance Scope

Infrastructure

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Non-Coded

Self-Certified Requirement Set

ITK Conformance – Types

1) Applications

2) Middleware / Adapters

3) Spine Mini Services

4) Content Ready Only (HL7v2 ADT)

ITK Conformance – Example

Supplier: Acme

Product Name and Version: Portal v1.0

System Type: ITK2.0 Client Application using Web Services

Bundles: Correspondence Discharge v1.0 and Non-Coded CDA v1.0



To: Acme

From: NHS Digital, Operational & Assurance Services Directorate.

Dear Sirs,

ITK CONFORMANCE CERTIFICATE

Supplier and Product Details			
Supplier Name	Acme		
Product Name	Portal		
Product Version ID	V1.0		
Product Type	Application Host		
Toolkit Readiness Level	Secure Web Service Enabled		
ITK Conformance Certificate No.		IAC Approval Date	
CAP Reference No.	N/A	Supplier NACS Code	N/A

We confirm that relevant deliverables and evidence necessary to support the applications ITK interfaces for the Interoperability Toolkit Certificate have been received. The evidence is sufficient to prove that the required standard for the interfaces of the Product have been achieved.

ITK Catalogue

The screenshot shows a web browser window with the URL <https://digital.nhs.uk/interoperability-toolkit/accreditation-catalogue>. The page features the NHS Digital logo and a search bar. A navigation menu includes links for 'Data and information', 'Systems and services', 'News and events', 'What is NHS Digital?', and 'How we look after your information'. A breadcrumb trail reads: Home / Systems and services / All A - Z / The Interoperability Toolkit / Accreditation / Conformance Catalogue. The main heading is 'Conformance Catalogue'. The introductory text states: 'The ITK Conformance Catalogue is a way to identify all vendors and products that have been awarded ITK Standards Conformance Certificates by Solution Assurance.' Below this, there are three paragraphs: 'Certificates are awarded following successful submission of test results and supporting evidence.', 'The catalogue provides a full list of all systems that conform in alphabetical order of vendor, detailing the ITK message bundles that a given product supports.', and 'Message bundles are created by collecting together all message interaction specifications to achieve a specific task, such as sending correspondence in the form of a basic document transmission. The catalogue can also be viewed divided into categories based on the system types.' The final sentence, partially cut off, reads: 'Client applications are systems that create ITK messages to send to another system, such as a trust Electronic Patient Record system sending a

<https://digital.nhs.uk/interoperability-toolkit/accreditation-catalogue>

ITK Conformance Pack on TRUD

hscic Health & Social Care Information Centre

Interoperability Toolkit Accreditation Pack

Introduction ▾ Accreditation Scope ▾ Accreditation Overview ▾ Related Documents ▾ Toolkit Workbench ▾ **Version: 3.2 Status: Issued**

ITK Accreditation Artefacts

The following documents are the formal artefacts making up the ITK accreditation pack. The accreditation process overview [page](#) explains the role of each document.

Format	Document title	Description
	Supplier Certified Requirements Coverage Pack V7.0.zip	This pack includes a spreadsheet which is used to record supplier self certified statements and evidence mapped against each requirement and also details test cases linked to requirements. It forms the central artefact for all accreditation submissions. To use the pack, copy the contents to a local drive, the Requirements Spreadsheet Pack folder contains useful documents which are included as links within the spreadsheet.
	Toolkit Service Listing - Release V3.0.xls	This spreadsheet contains a full list of the ITK service listing. Each spreadsheet tab corresponds to an ITK requirements pack, as found on TRUD.

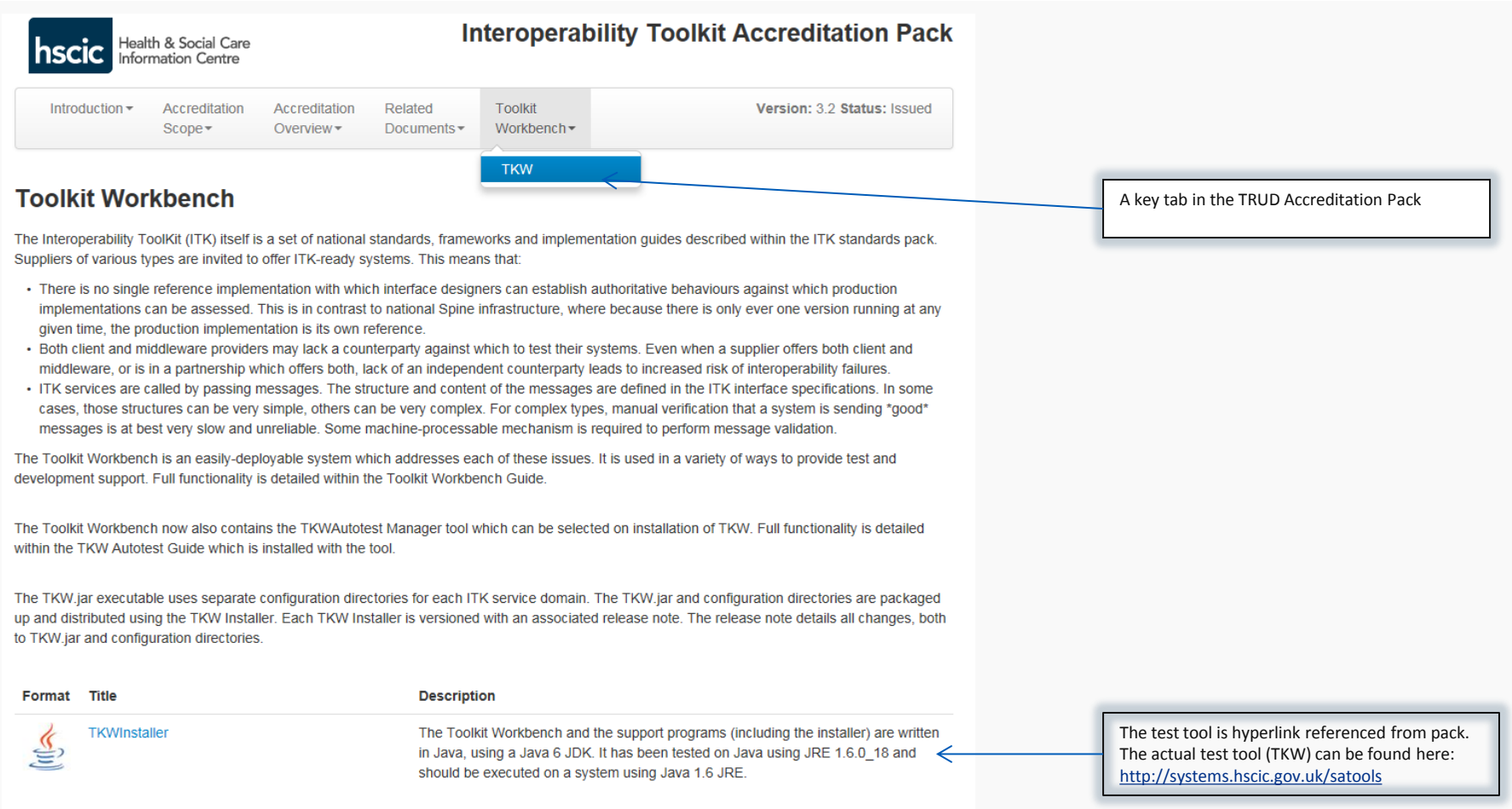
Contact Us **Release Date:** 10 June 2014

A key tab in the TRUD Accreditation Pack

Contains the central artefact for all ITK Accreditation Submissions

A list of services currently available for ITK Interface Accreditation (note embedded earlier in this slide deck – this is a key document)

ITK Conformance Pack on TRUD



hscic Health & Social Care Information Centre

Interoperability Toolkit Accreditation Pack

Introduction ▾ Accreditation Scope ▾ Accreditation Overview ▾ Related Documents ▾ **Toolkit Workbench ▾** Version: 3.2 Status: Issued

TKW

Toolkit Workbench


The Interoperability ToolKit (ITK) itself is a set of national standards, frameworks and implementation guides described within the ITK standards pack. Suppliers of various types are invited to offer ITK-ready systems. This means that:

- There is no single reference implementation with which interface designers can establish authoritative behaviours against which production implementations can be assessed. This is in contrast to national Spine infrastructure, where because there is only ever one version running at any given time, the production implementation is its own reference.
- Both client and middleware providers may lack a counterparty against which to test their systems. Even when a supplier offers both client and middleware, or is in a partnership which offers both, lack of an independent counterparty leads to increased risk of interoperability failures.
- ITK services are called by passing messages. The structure and content of the messages are defined in the ITK interface specifications. In some cases, those structures can be very simple, others can be very complex. For complex types, manual verification that a system is sending "good" messages is at best very slow and unreliable. Some machine-processable mechanism is required to perform message validation.

The Toolkit Workbench is an easily-deployable system which addresses each of these issues. It is used in a variety of ways to provide test and development support. Full functionality is detailed within the Toolkit Workbench Guide.

The Toolkit Workbench now also contains the TKWAutotest Manager tool which can be selected on installation of TKW. Full functionality is detailed within the TKW Autotest Guide which is installed with the tool.

The TKW.jar executable uses separate configuration directories for each ITK service domain. The TKW.jar and configuration directories are packaged up and distributed using the TKW Installer. Each TKW Installer is versioned with an associated release note. The release note details all changes, both to TKW.jar and configuration directories.

Format	Title	Description
	TKWInstaller	The Toolkit Workbench and the support programs (including the installer) are written in Java, using a Java 6 JDK. It has been tested on Java using JRE 1.6.0_18 and should be executed on a system using Java 1.6 JRE.

A key tab in the TRUD Accreditation Pack

The test tool is hyperlink referenced from pack. The actual test tool (TKW) can be found here: <http://systems.hscic.gov.uk/satools>

Conformance Evidence

- Submitted via sharepoint site
- All correspondence with the conformance team via the shared mailbox itkconformance@hscic.gov.uk

ITK Conformance - Durations

Average elapsed duration 25 days

ISCF - Longest 58 elapsed days

ISCF - Shortest 5 elapsed days

(Clock started once first evidence submitted)

Other Services

- Information and tools to help developers create software for health and social care
- Software tools and code examples
- ITK Java Reference Implementation
- ITK Microsoft .NET example in development
- Screencasts demonstrating use of TKW and TKW Autotest Manager

<http://developer.nhs.uk/testcentre/itk-testbench/>

ITK Conformance Catalogue

- Conformant systems listed on the ITK Conformance catalogue
- NHS purchase decision makers can access to help select appropriate interoperability products.
- Provides an NHS kite mark.

Others services

- ITK Workshops / WebExes (Introduction, Development, Conformance)
- Mailbox support during development and accreditation - <mailto:itkconformance@hscic.gov.uk>

<https://digital.nhs.uk/interoperability-toolkit/accreditation-catalogue>



www.digital.nhs.uk

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