

# Genomic Medicine Service – Interoperability Use Cases Pack (Project Phase 1 Specific)

## Diagram Pack Purpose

- Provide a basis for deriving **high-level technical requirements** for national interoperability project.
- Provide a basis for deriving **high-level user requirements** for national interoperability project.
- Provide a basis for deriving **mid-level functional/non-functional requirements** for national interoperability project.
- Once completed, material may transfer to broad context diagrams pack, as shared with the wider GU for general understanding of the GMS

## Document Control

Version	Date	Modifier	Comments/Updates
0.1	20.01.2023	M Price	Initial drafts – interop tech requirements model, HL-use case diagram, mid-level test directory diagram
0.2	27.01.2023	M Price	Test ordering/requesting mid-level diagram added + various other minor amends
0.3	23.01.2023	M Price	Test Reporting, Sample Tracking and Test Status mid-level diagrams added + various other minor amends
0.4	07.02.2023	M Price	Actors mapping added _ various minor amends

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- [UC03 – Mid-level – Sample Processing Use Case Model](#)

- [UC04 – Mid-level – Genetic/Genomic Data Processing Use-Case Model](#)

- [UC05 – Mid-level - Test Interpretation Use Case Model](#)

- [UC06 – Mid-level – Genomic MDT Use Case Model](#)

- [UC07 – Mid-level - Test Report Distribution Use Case Model](#)

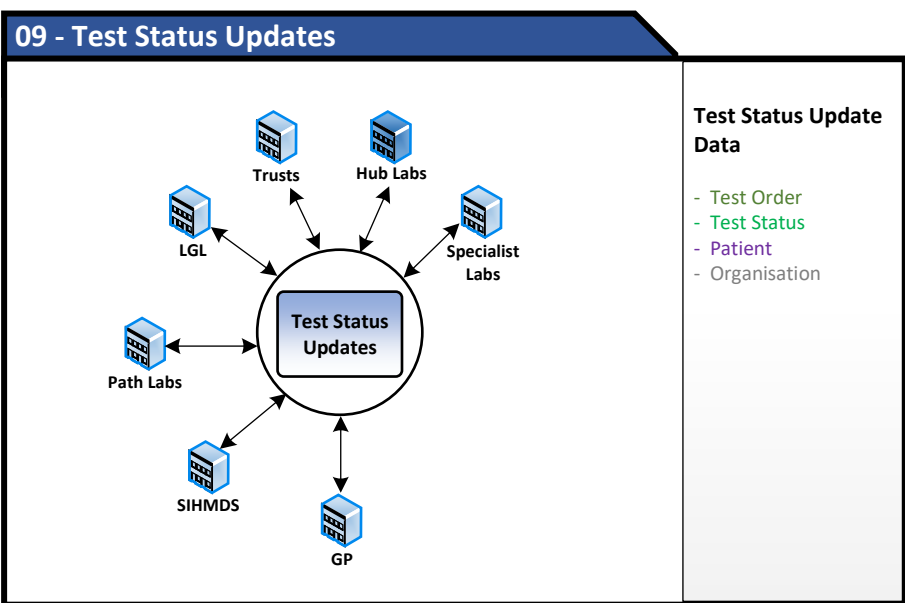
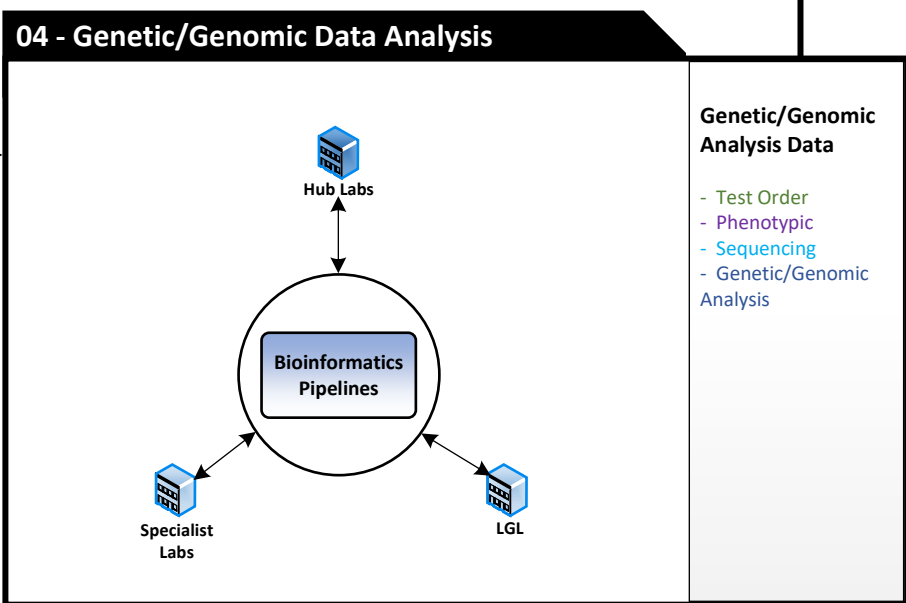
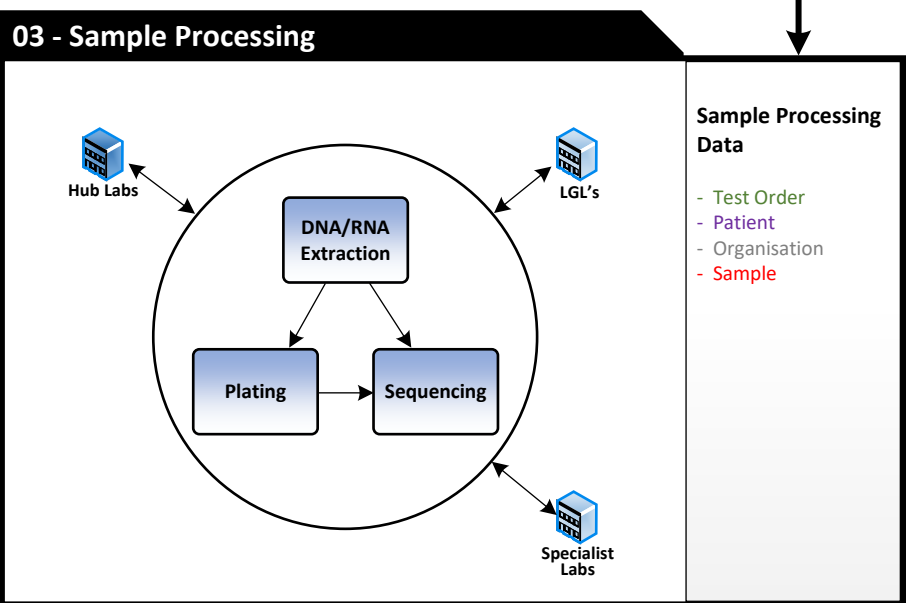
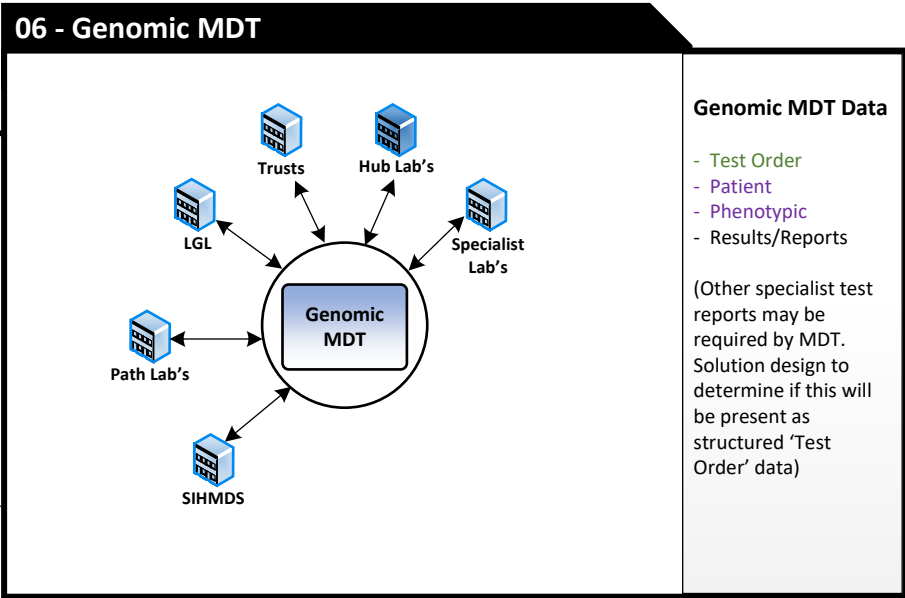
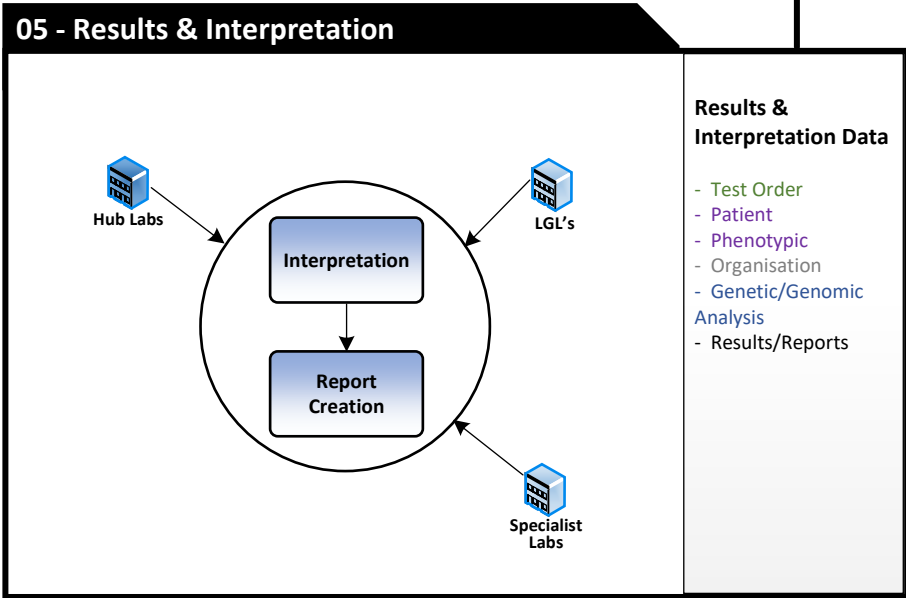
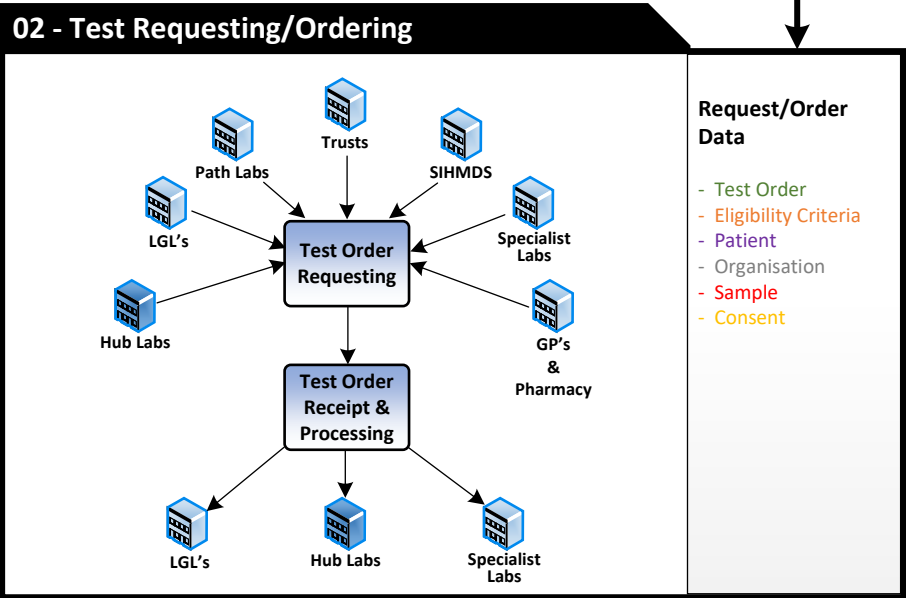
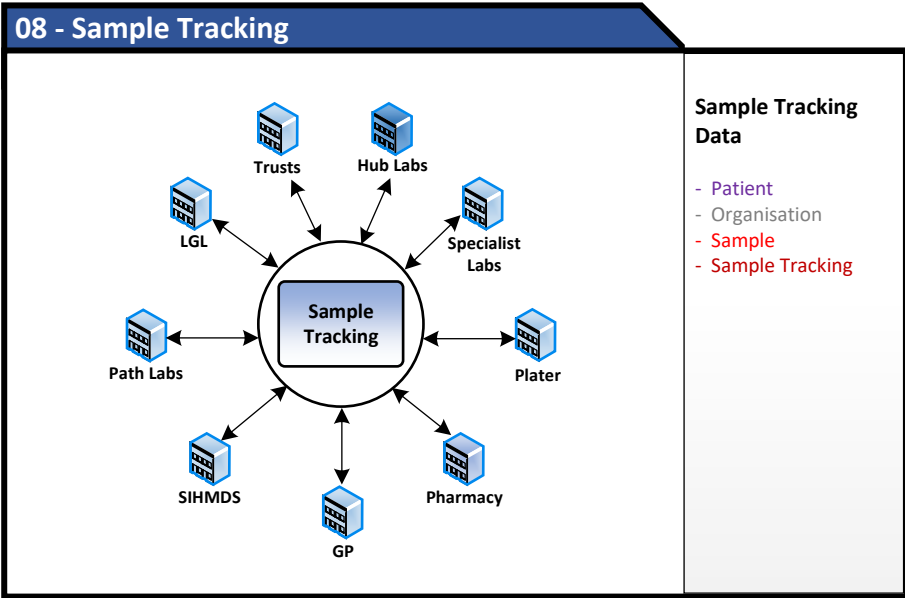
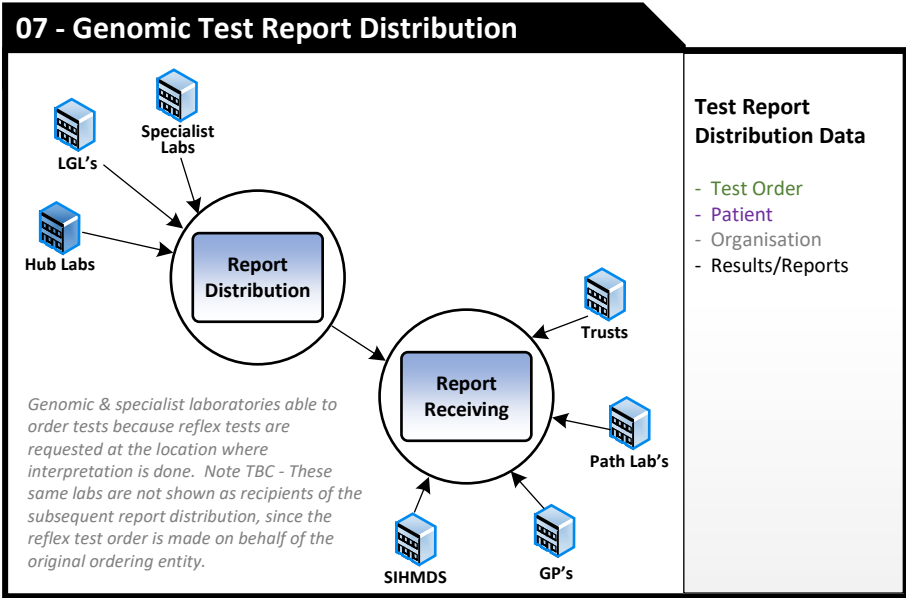
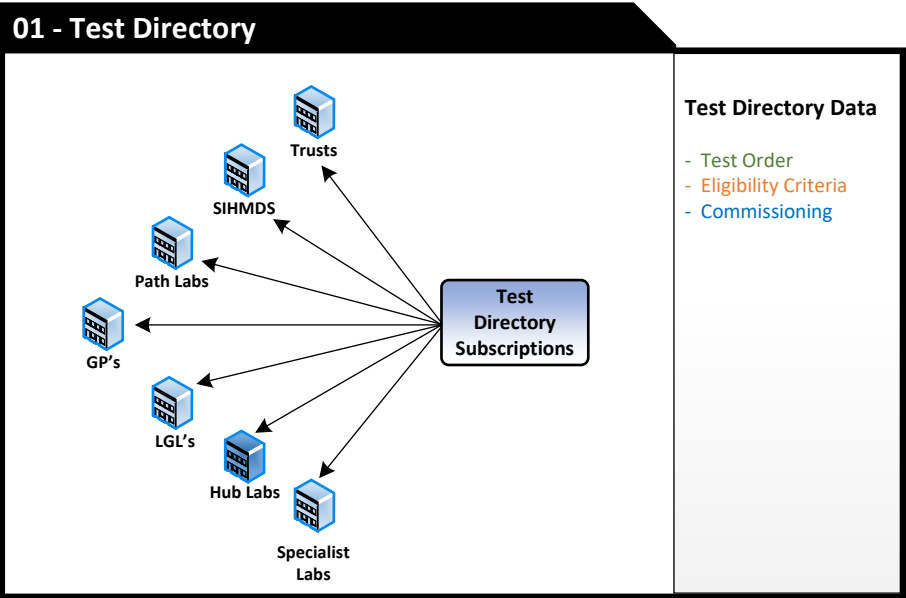
- [UC08 – Mid-level – Sample Tracking Use Case Model](#)

- [UC09 – Mid-level – Test Status Updates Use Case Model](#)

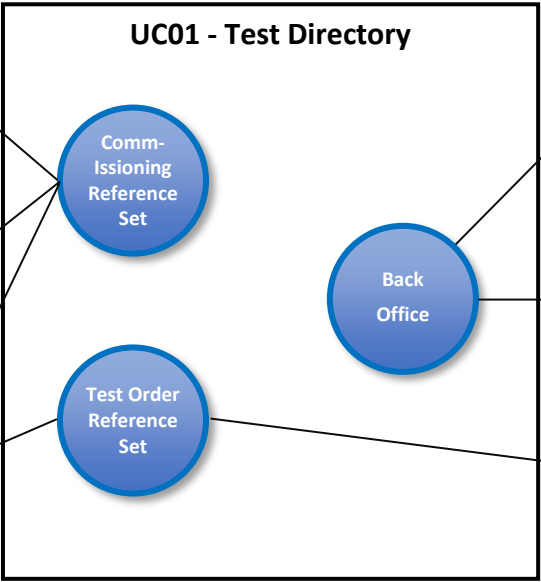
- [Actors – Use Case Mapping](#)

# GMS Interoperability | High-Level Requirements Model

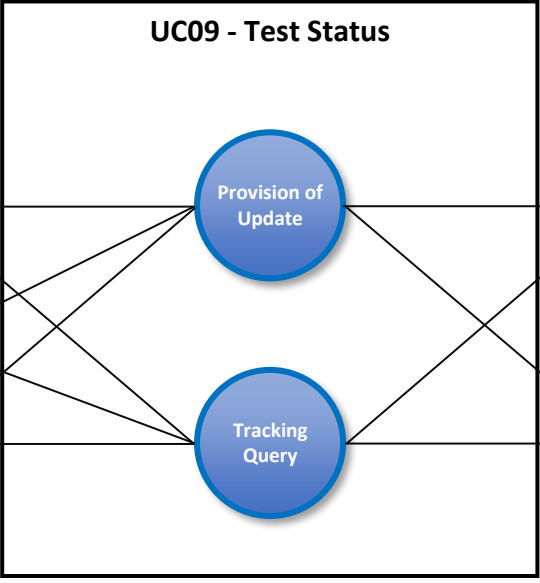
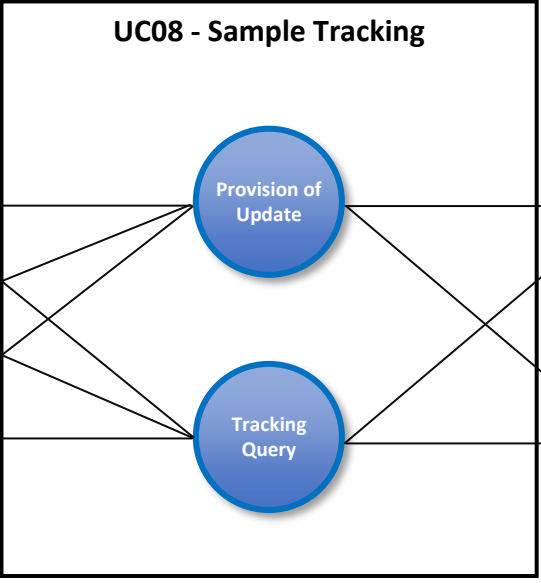
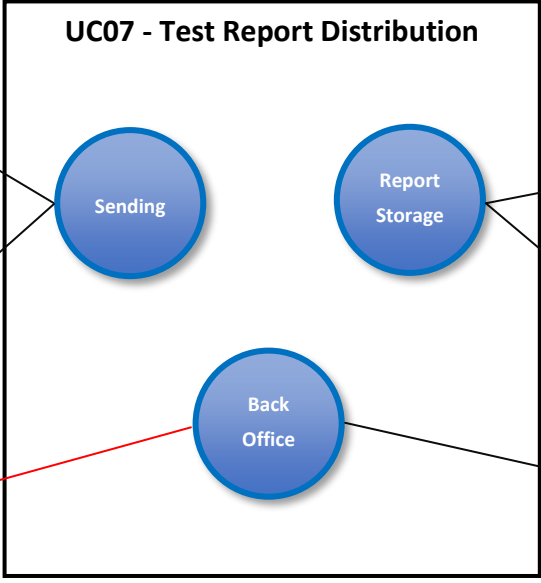
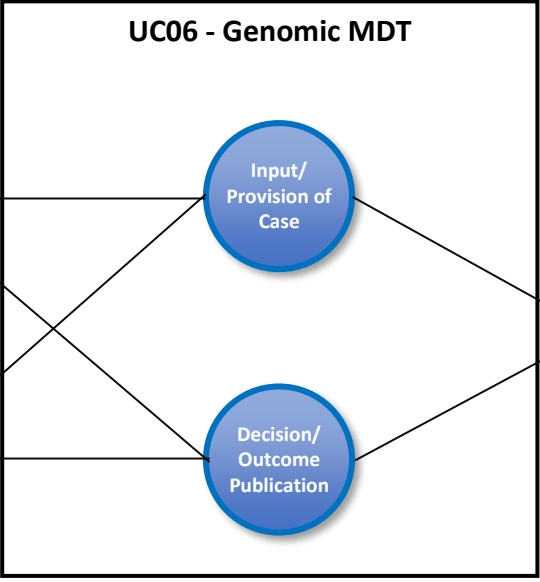
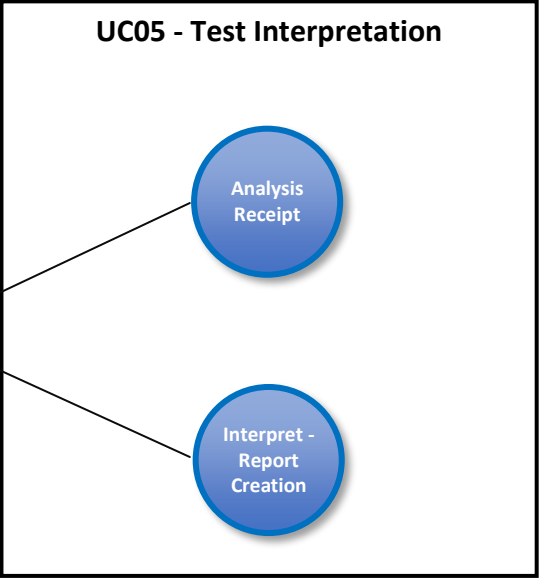
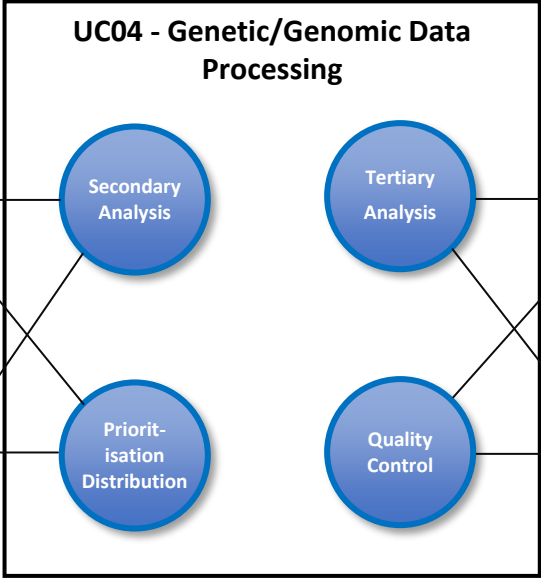
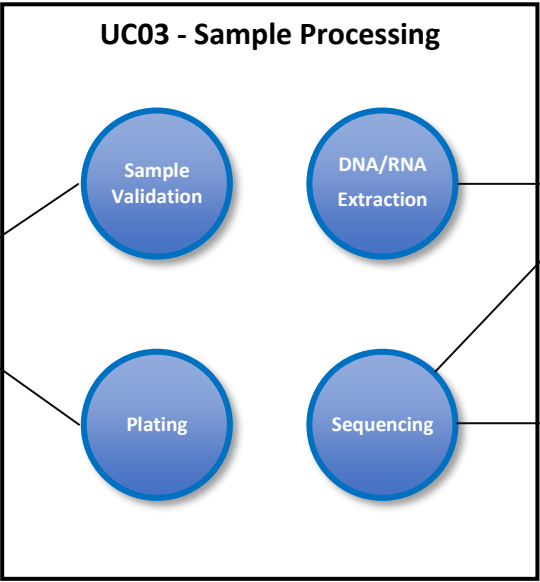
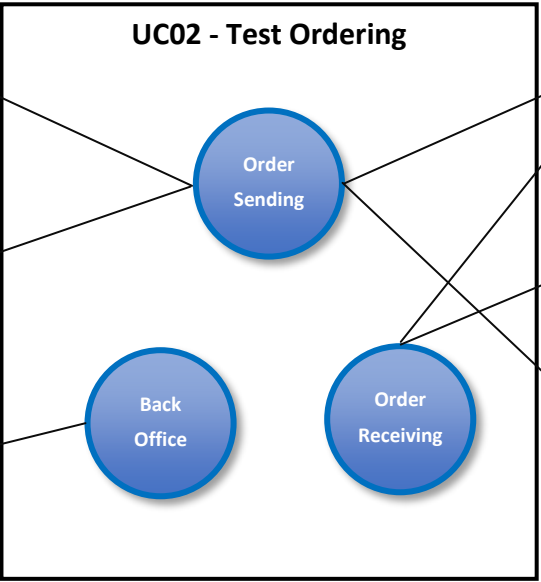
The data groups shown may be either consumed or generated by the capabilities depicted in the models below.



# GMS Interoperability | High-Level Use Cases



Would lab staff also consult test directory (theoretically if not typically) to select a reflex/confirmatory test.



# GMS Interoperability | Mid-Level Use Cases - UC-01 Diagram

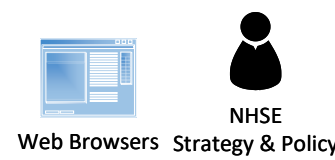
Present - As-Is

Additions - To-Be

## Requirements considerations:

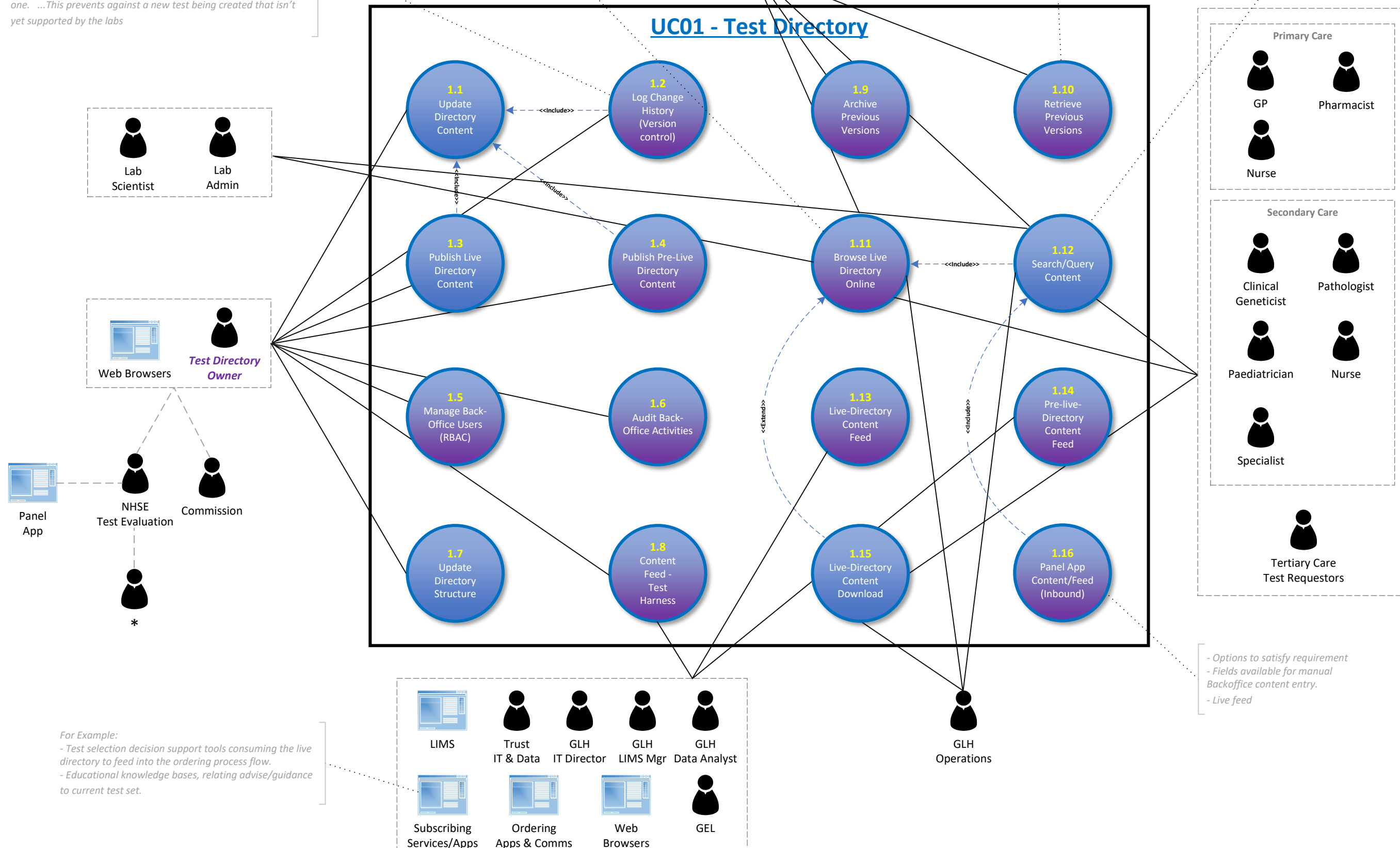
- Versioning should be at full directory level not fields.
- Ability for major & minor versions.
- Gene content from panel app needs to carry the version from panel app
- Previous versions should still be machine readable and available for any system (i.e. LIMS) that have not yet configured to the new one. ...This prevents against a new test being created that isn't yet supported by the labs

- To include links to current PanelApp content for each test entry



- Requirements special consideration- PanelApp content to be from version current at the time of archiving.

- Requirements special consideration- Search by phenotype to be relate to current PanelApp content.  
- Explore white and blacklist pre-determined results



# GMS Interoperability | Mid-Level Use Cases - UC-02 Diagram

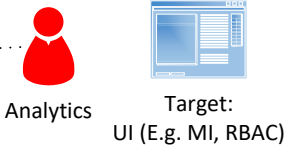
Present  
- As-Is

Additions  
- To-Be

Key  
Data  
Movement



Back-office for - Will the commission need information (via analytics team) specific to the use central infrastructure (broker model). I.e. The uptake of the new technology vs holistic activity metrics?

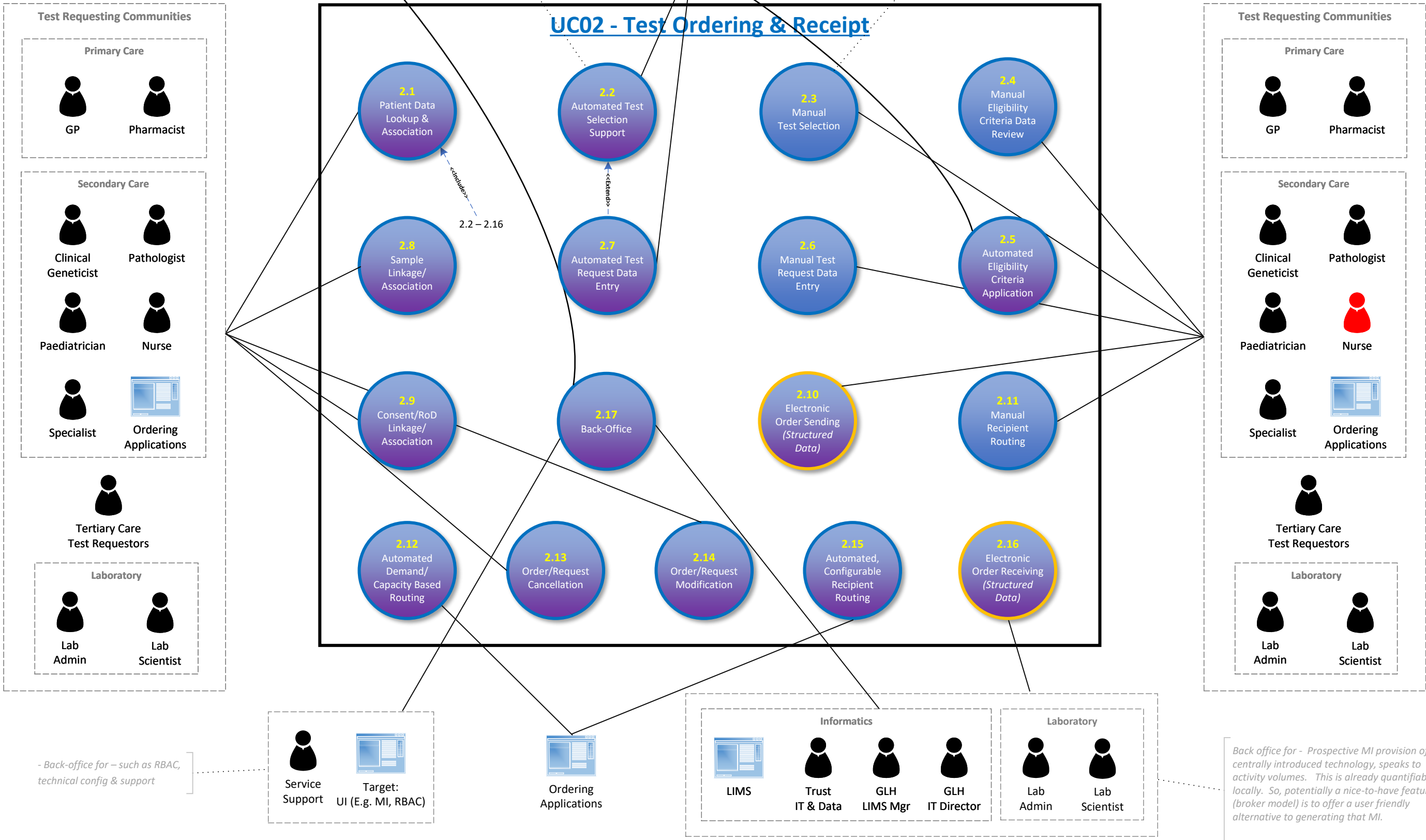


For Example:  
- Mapped to roles  
- Mapped to Eligibility  
- Mapped to phenotype/genotype  
- Mapped to family history  
- Mapped to results  
- Mapped to Imaging?



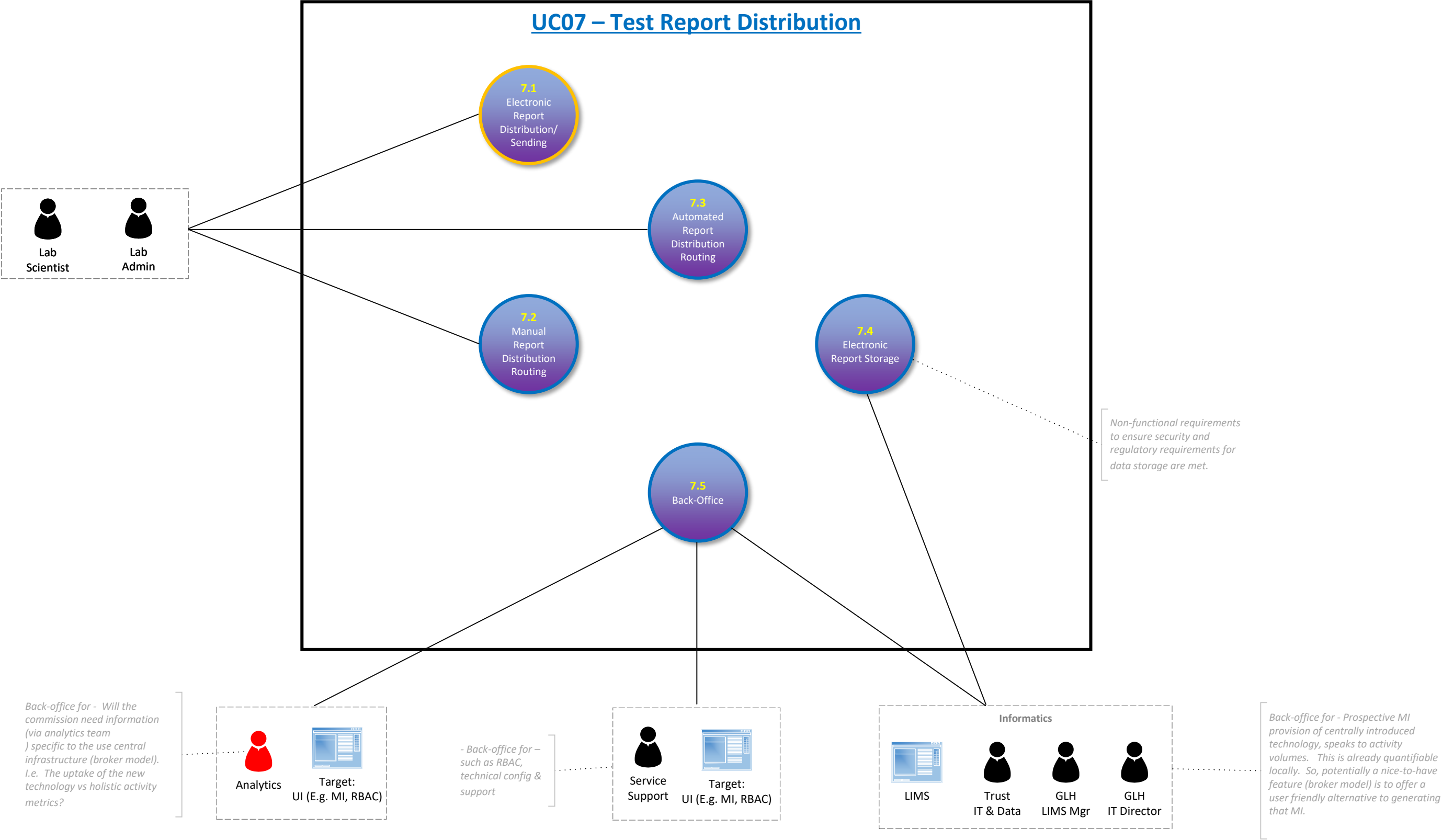
Consider:  
- Standard test request  
- Reflex Test Requests  
- Re-analysis requests (standard minus the sample flow)  
- Re-classification requests (standard minus the sample flow)  
- Confirmatory Tests

## UC02 - Test Ordering & Receipt



Back office for - Prospective MI provision of centrally introduced technology, speaks to activity volumes. This is already quantifiable locally. So, potentially a nice-to-have feature (broker model) is to offer a user friendly alternative to generating that MI.



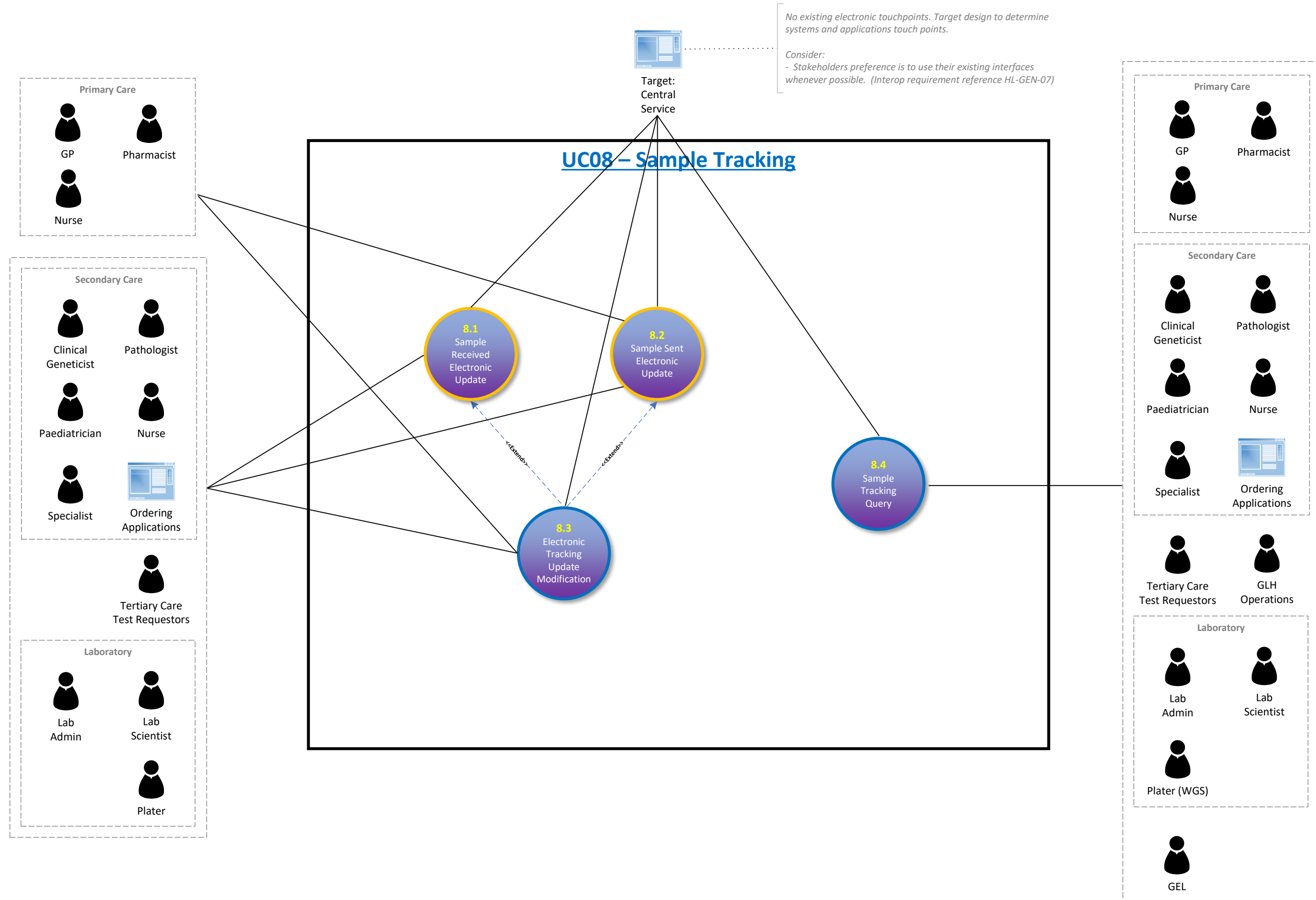


# GMS Interoperability | Mid-Level Use Cases - UC-08 Diagram

Present  
- As-Is

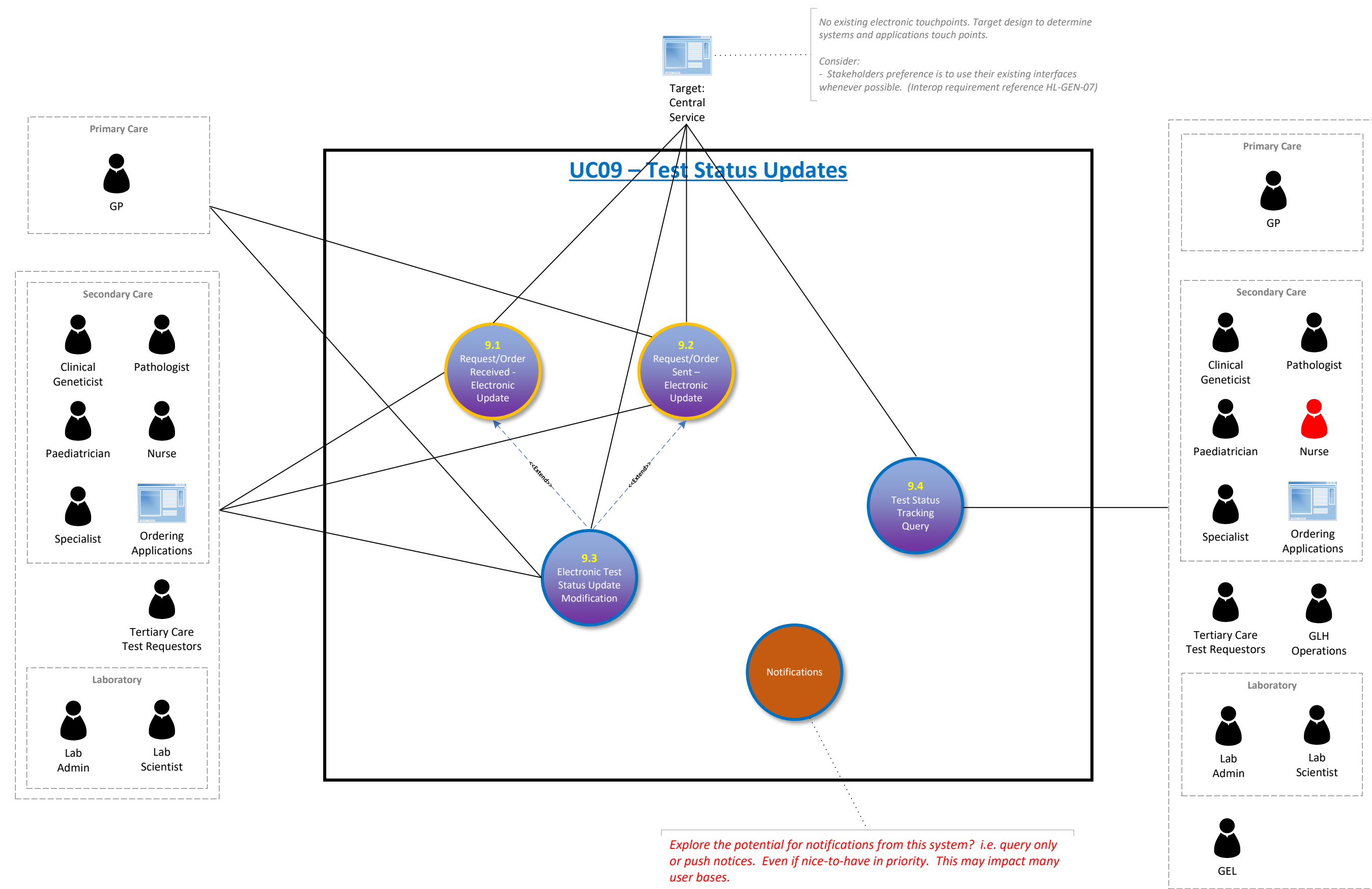
Additions  
- To-Be

Key  
Data  
Movement



# GMS Interoperability | Mid-Level Use Cases - UC-09 Diagram

Present - As-Is      Additions - To-Be      Key Data Movement





# GMS Interoperability | Mid-Level Use Cases - Actors & Use Cases Mapping



		Primary Care			Secondary Care					Tertiary Care	Laboratory				IT & Informatics				Operational	NHSE - Central					GEL
UC-ID	UC - Short Desc	G	Pharma	Nur	Paediatric	Genetic	Patholog	Nu	Specia	Test Reques	Laboratory Admin	Laboratory Scienti	Plater (WGS)	Bioinformati-cian	Trust IT & Data	GLH IT Director	GLH LIMS Mgr	GLH Data Analyst	GLH Operation	Service & Support (Centra	Commissi	Test Directory Owner	NHSE Test Evaluation	NHSE Analytics	GEL
Use Case Model 1 - Test Directory																									
1.1	Update Directory Content																				in-direct	X	in-direct		
1.2	Log Change History (Version control)																					X	in-direct		
1.3	Publish Live Directory Content																					X	in-direct		
1.4	Publish Pre-Live Directory Content																					X	in-direct		
1.5	Manage Back-Office Users (RBAC)																					X	in-direct		
1.6	Audit Back-Office Activities																					X	in-direct		
1.7	Update Directory Structure																				in-direct	X	in-direct		
1.8	Content Feed - Test Harness														X	X	X	X				X	in-direct		X
1.9	Archive Previous Versions																						in-direct		
1.10	Retrieve Previous Versions																						in-direct		
1.11	Browse Live Directory Online	X	X	X	X	X	X	X	X	X	X	X								X			in-direct		
1.12	Search/Query Content	X	X	X	X	X	X	X	X	X	X	X								X			in-direct		
1.13	Live-Directory Content Feed														X	X	X	X					in-direct		X
1.14	Pre-live-Directory Content Feed														X	X	X	X					in-direct		
1.15	Live-Directory Content Download	X	X	X	X	X	X	X	X	X									X				in-direct		
1.16	Panel App Content/Feed (Inbound)																						in-direct		
Use Case Model 2 - Test Ordering & Receipt																									
2.1	Patient Data Lookup & Association	X	X		X	X	X		X	X	X	X													
2.2	Automated Test Selection Support																								
2.3	Manual Test Selection	X	X		X	X	X		X	X	X	X													
2.4	Manual Eligibility Criteria Data Review	X	X		X	X	X		X	X	X	X													
2.5	Automated Eligibility Criteria Application	X	X		X	X	X		X	X	X	X													
2.6	Manual Test Request Data Entry	X	X		X	X	X		X	X	X	X													
2.7	Automated Test Request Data Entry																								
2.8	Sample Linkage/Association	X	X		X	X	X		X	X	X	X													
2.9	Consent/RoD Linkage/Association	X	X		X	X	X		X	X	X	X													
2.10	Electronic Order Sending (Structured Data)	X	X		X	X	X		X	X	X	X													
2.11	Manual Recipient Routing	X	X		X	X	X		X	X	X	X													
2.12	Automated Demand/Capacity Based Routing																								
2.13	Order/Request Cancellation	X	X		X	X	X		X	X	X	X													
2.14	Order/Request Modification	X	X		X	X	X		X	X	X	X													
2.15	Automated, Configurable Recipient Routing																								
2.16	Electronic Order Receiving (Structured Data)										X	X			X	X	X								
2.17	Back-Office														X	X	X			X				X	
Use Case Model 7 - Test Report Distribution																									
7.1	Electronic Report Distribution/Sending										X	X													
7.2	Manual Report Distribution Routing										X	X													
7.3	Automated Report Distribution Routing										X	X													
7.4	Electronic Report Storage														X	X	X								
7.5	Back-Office														X	X	X			X				X	
Use Case Model 8 - Sample Tracking																									
8.1	Sample Received Electronic Update			X	X	X	X	X	X	X	X	X													
8.2	Sample Sent Electronic Update	X	X	X	X	X	X	X	X	X	X	X													
8.3	Electronic Tracking Update Modification	X	X	X	X	X	X	X	X	X	X	X													
8.4	Sample Tracking Query	X	X	X	X	X	X	X	X	X	X	X	X						X						X
Use Case Model 9 - Test Status Updates																									
9.1	Request/Order Received - Electronic Update				X	X	X		X	X	X	X													
9.2	Request/Order Sent – Electronic Update	X			X	X	X		X	X	X	X													
9.3	Electronic Test Status Update Modification	X			X	X	X		X	X	X	X													
9.4	Test Status Tracking Query	X			X	X	X		X	X	X	X							X						X