	Commercial in Confidence GP2GP R2.2 Requirements Specification			
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	Prog. Director	Kemi Adenubi	Version	7.2
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	Author	Will Nossiter Tim Tett Aled Greenhalgh	Status	FINAL

GP2GP R2.2 Requirements Specification

Amendment History

Version	Date	Amendment History
		Previous version history, please see older document versions...
3.0		**Approved for 1.1A**
3.1	9-Nov-2007	Draft updates for version 2 of GP2GP. All version 2 updates are marked with the tag "[V2]".
3.2	10-Dec-2007	Updated with minor comments after full external review. Issued for final review
3.3	21-Dec-2007	Updated with further minor comments from final review. Document issued for approval.
4.0	21-Dec-2007	Approved subject to project board review.
4.1	06-Feb-2008	Minor updates to address comments raised by project board. These include minor updates to the core ABA requirement.
5.0	01-Mar-2009	Updated to reflect 2.1 Specification, namely the introduction of Selective Import / A-B-A processing, formerly referred to as Core A-B-A. What was tagged as [V2] has been reviewed and retagged as [V2.1]
6.0	16-Sep-2009	Updated to implement the revised requirements for A-B-A Processing, Summary Care Flag Preservation and Large Messaging. This replaces the withdrawn V2.1. New Requirements are flagged as [V2.2].
6.1	27-Oct-2009	Introduced detailed scenarios to elaborate A-B-A processing and simplified functional requirements as a result.
6.2	02-Feb-2010	Minor amendments post the CCN Review Period for the 2.2 Specification and the 3rd Cross Supplier GP2GP workshop.
6.3	22-Sep-2010	Rewrite and restructure to incorporate: 1. Review of the specification in the context of post 1.1a implementation. Removal of deprecated requirements and other housekeeping 2. Removal of the positive ACK returned on receipt of an EHR Request. 3. Significant revisions to management information requirements 4. Provision of a high-level 'business' use cases for management information harvesting and EHR transfer to allow suppliers a frame of reference for their lower level system use cases. 5. Significant document restructure, with increase use of supplementary specifications for detail of functional areas. Issue for Review.
7.0	13-Jan-2010	Draft issue to limited internal reviewers
7.0	21-Jan-2010	Final issue to internal reviewers
7.0	25-Jan-2010	Issued for approval – **Approved for 2.2a,b,c**
7.1	13-Feb-2014	Uplifted following revision of 2.2b and 2.2c requirements
7.2	23-May-2014	Uplifted to take account of further elaboration of A-B-A requirements

Reviewers:

This document must be reviewed by the following (delegated as necessary).

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Leo Fogarty	SCR Clinical Lead	20-May-2014	7.2
	MicroTest	07-May-2014	7.1
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Mark Byrne	SCR Technical Architect	20-Jan-2010	7.0

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Jill Hepworth		GP2GP Programme Manager	25-Jan-2010	7.2
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	GPSoC Release Managers	25-Jan-2010	7.0

Kemi Adenubi	HSCIC GPIT Programme Director	21-May-2014	7.2

Document Status:

This is a controlled document. This document is valid from: 23rd May 2014

On receipt of a new issue, please destroy all previous issues (unless a specified earlier issue is base-lined for use throughout the programme).

Related Documents:

There are a number of subsidiary documents that form part of this specification. These are listed in the table below and in Figure 1 below.

Ref No.	Document Reference Number / URL	Title
2	NPFIT-PC-BLD-0172.01	Use Case 1: Transfer electronic healthcare record
3	NPFIT-PC-BLD-0173.01	Use Case 2 Transfer and analyse management information
4	NPFIT-FNT-TO-TIN-0289.08	Supp Spec: Handling attachment types
5	NPFIT-FNT-TO-TIN-1087.02	Supp Spec: Handling medication discontinuation
6	NPFIT-PC-BLD-0132.03	Supp Spec: Structured degrade handling
7	NPFIT-PC-BLD-0133.02	Supp Spec: Handling and propagation of non-consultation data
8	NPFIT-PC-BLD-0134.05	Supp Spec: Representing PMIP result data in GP2GP messages
9	NPFIT-PC-BLD-0158.05	Supp Spec: Attachment references
10	NPFIT-PC-BLD-0163.02	Supp Spec: Topic and category handling in GP2GP
11	NPFIT-PC-BLD-0175.01	Supp Spec: Handling A-B-A transfers
12	Placeholder	Supp Spec: Handling archetypes
13	NPFIT-PC-BLD-0170.03	Supp Spec: Handling large messages
14	NPFIT-PC-BLD-0181.02	Supp Spec: Handling the SCR indicator
15	NPFIT-PC-BLD-0171.01	Supp Spec: Harvesting management information
17	NPFIT-PC-BLD-0178.01	Supp Spec: Coding Scheme Translation
18	NPfIT-PC-BLD-0083.07	GP2GP Response Codes
19	NPFIT-PC-BLD-0069.23	GP2GP Spine Technical Design
20	NPFIT-FNT-TO-TAR-0017.7	Compliance Requirements for Patient Registration
21	NPFIT-FNT-TO-IG-DES-0115.01	Statement on Data Retention
22	NPFIT-PC-BLD-0177.01	Supp Spec: User Experience
23	NPFIT-PC-BLD-0180.02	GP2GP Transfer of Patient Facing Service Settings

Ref No.	Document Reference Number / URL	Title
25	NPFIT-PC-BLD-0099.04	Handling Missing Attachments

The diagram below depicts the GP2GP Compliance Requirement structure. Documents represented without a Document Reference Number are placeholders to be completed at a later date.

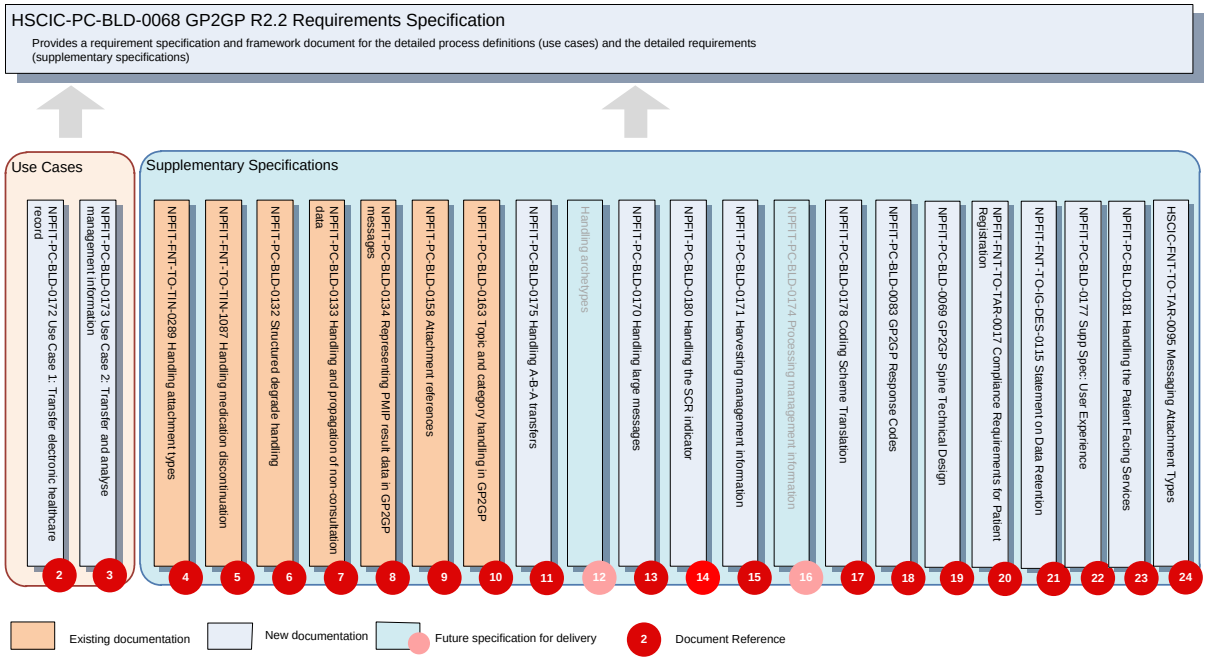

Figure 1 - The GP2GP R2.2 Requirements Specification document set

Glossary of Terms:

List any new terms created in this document. Mail the NPO Quality Manager to have these included in the master glossary above.

Term	Acronym	Definition
A-B-A	A-B-A	The functionality that allows a Returning Patient's EHR Extract to be integrated into the requesting primary care system.
Accredited System ID	ASID	Reference to a single instance of supplier software in a non hosted environment, where services (e.g. GP2GP) can be enabled or disabled. In a hosted environment this definition breaks down as a single instance of supplier software supports multiple practices (NACS) some of which may require GP2GP to be disabled (e.g. lack of training).

Term	Acronym	Definition
Access Control System	ACS	The Spine system that supports the Access Control Framework which records patient's preferences/consent values relating to the Summary Care Record
Common Point to Point Messaging	-	Point to point messaging service across TMS designed to forward unspecified messages. Used to support the Large Messaging Protocol.
Data Transfer Service	DTS	Point to many, "mail box" orientated messaging service across N3 network designed to forward unspecified messages. Separate from TMS.
Electronic Healthcare Record	EHR	A record of a patient's primary care transferred between primary care organisations using the GP2GP solution.
EHR Extract	-	The extracted information from a patient's old GP practice electronic patient record that is to be sent to the patient's new GP practice.
EHR Request	-	The message sent by the Requesting system to the Sending system requesting the EHR Extract
EHR Response		Used synonymously with 'EHR Extract'
Electronic Patient Record	EPR	A patient's primary care record held electronically within a primary care system.
Message Implementation Manual	MIM	The reference that defines the message patterns, schemas and content of the GP2GP messages used in GP2GP.
	MIM 3	Specifically version 3.1.10 of the MIM that defines the messages used in GP2GP baseline 1.1a and 2.2a and 2.2b.
	MIM 7	Defines the Common Point 2 Point messages introduced in 2.2a for the Large Messaging requirements bundle.
Domain Message Specification	DMS	The reference that defines the message patterns, schemas and messages used in GP2GP baseline 2.2c
	DMS 1	Specifically version 1.0 of the DMS for GP2GP that defines the messages used in GP2GP baseline 2.2c. This supersedes the MIM 7 messages.
Organisation Data Service	ODS	ODS codes (formerly NACS codes) provide a unique identifier for any organisational entity providing NHS services, whether a trust, PCT, a hospital, a ward within a hospital, a treatment centre or mobile unit.
Personal Demographic Service	PDS	The Spine sub-system that stores patient demographic data.
Requesting System		The system that requests an EHR Extract, i.e. the system of the patient's new practice.
Returning Patient		A patient registration where the requesting primary care system already has a pre-existing record for the patient, but the patient has subsequently been a permanent patient at a different primary health care provider.
Safe Exchange Framework	SEF	Message filtering service that can inhibit messages between suppliers / software / versions. Allows central shut down of specific GP2GP interactions in the event of (clinical safety) problems.

Term	Acronym	Definition
Sending System		The system that sends an EHR Extract, i.e. the system of the patient's old practice.
Common Point to Point	P2P	A MIM 7 message without any defined HL7 content and thus can be used to convey any content. In the context of GP2GP this is used to carry one or more parts of an EHR Extract (including attachments, compressed files)
Inbox		A logical view of the received EHR Requests and EHR Extracts within the main system, i.e. a business view and not a MHS view.
Outbox		A logical view of the EHR Requests and EHR Extracts waiting to be sent within the main system, i.e. a business view and not a MHS view. (NB This would normally be empty unless there is an issue preventing the Extract from being sent)
Sent Items		A logical view of the sent EHR Requests and EHR Extract messages within the main system, i.e. a business view and not a MHS view.
Internal Transfer		A patient registers with a General Practice surgery that shares a single patient database with the patient's previous General Practice surgery, previously known as 'Single Instance Database'.
Workflow Manager		In the context of GP2GP this is a logical concept representing a facility within the main GP system application that allows actions or task associated to the processing of an EHR Request, an EHR Extract or an associated GP2GP Paper Transfer Process to be assigned to users (manually or automatically) and for the user to mark them as completed once they have been carried out.
Single Instance Database		See 'Internal Transfer'
Patient Facing Services	PFS	The web based services delivered for patients to perform activities such as Appointment Booking, Repeat Prescription ordering, EHR viewing, Demographic changes.

Contents

Overview

This document specifies the set of requirements to be implemented for any systems wishing to be compliant with the Authority's requirements for the transfer of primary care electronic healthcare records (EHRs) between GP practices under GP2GP Release 2.2.

There are a number of new distinct bundles of requirements which have been introduced in Release 2.2 and these can be implemented in a modular fashion, i.e. as incremental upgrades adding one or more of the distinct modules at a time. These are:

- All Releases (All)
- Management Information (MI)
- Improved Error Handling/User Experience (UX)
- Large Messaging (LM)
- GP2GP Paper Transfer Decommissioning (PP)
- A-B-A Handling (AB)
- SCR Preference and Flag Handling (SC)
- Archetypes (AR)
- Clinical Coding Translation (CT)
- Patient Facing Settings (PS)

There are however some restrictions in the order in which they can be implemented. The bundles implemented will dictate the compliance version – one of 2.2a, 2.2b and 2.2c. These are illustrated in the diagram below which also indicates the associated MIM versions and data standards:

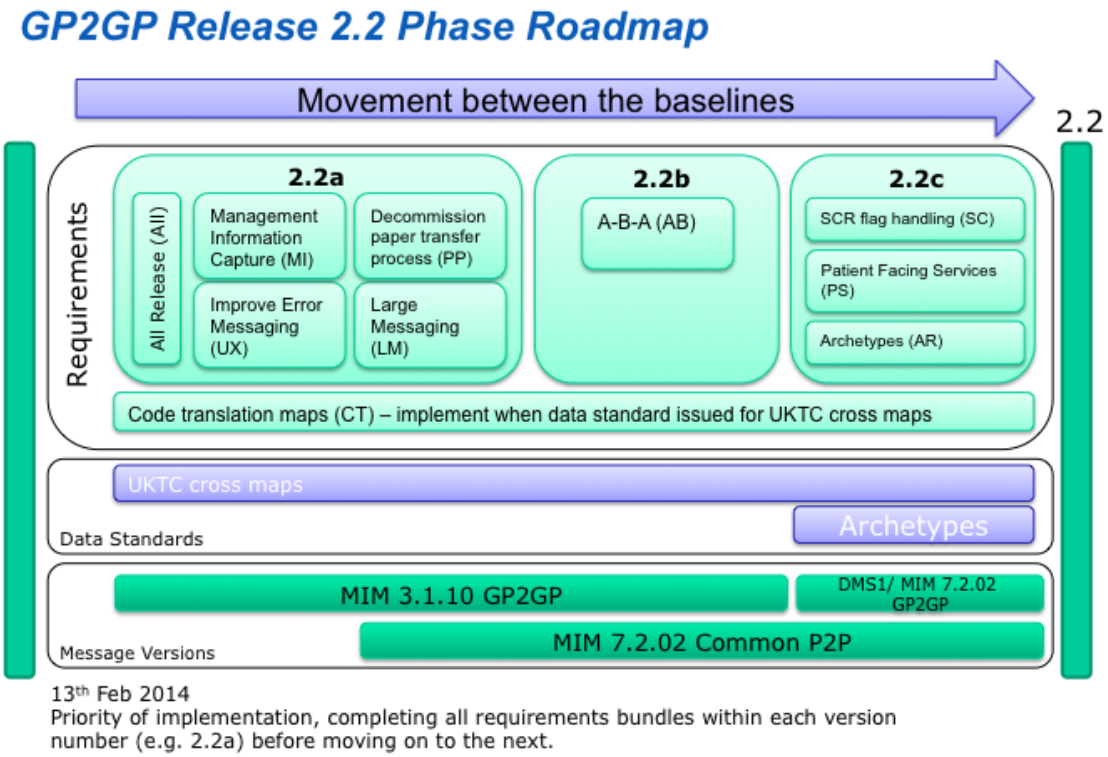

Figure 2 – Release 2.2 Requirements Specification Phase Roadmap

The compliance dependencies are:

- Requirements marked “All” must be included in the first release of any R2.2 requirements and all subsequent releases.
- GP2GP Paper transfer process (PP) requirements are dependent on all baseline 1.1a systems being fully compliant with the 1.1a requirements.
- A system must implement all requirements within 2.2a to become a 2.2a compliant system.
- A system must be compliant with 2.2a AND all the requirements in 2.2b to become 2.2b compliant. None of the 2.2b requirements can be implemented until 2.2a has been completed but 2.2b and 2.2a can be implemented in one release.
- A system must be compliant with 2.2a AND 2.2b AND all the requirements in 2.2c to become 2.2c compliant. None of the 2.2c requirements can be implemented until 2.2b has been completed but 2.2c and 2.2b can be implemented in one release.

Note that Clinical Coding Translation (CT) is required for all releases of 2.2a, 2.2b or 2.2c. Compliance with the ‘CT’ requirements impacts the Spine Safe Exchange Framework, i.e. it determines which other systems a system can safely exchange EHRs with. Support for, and successful assurance of, one or more mapping tables used in such transfers will result in the Spine SEF being updated to allow exchange between appropriate systems.

This document also includes the high-level business drivers / requirements that the project fulfils and relates these to more detailed system requirements. These in turn may be further elaborated in specific areas by 'supplementary specifications' documented in their own right which together with this document form the controlled GP2GP business domain element of the GP2GP Release 2.2 Compliance Requirements.

These documents, together with the Infrastructure, IG and PDS foundation modules, specify the entire required functionality to enable a system to become compliant with the GP2GP R2.2 Compliance Module under the GP Systems of Choice (GPSoC) contractual framework.

In order to provide a context within which suppliers can define their own system processes, this specification is supported by two use cases. The first is to provide the end to end business process overview for the transfer of the electronic healthcare record, that provides the context for supplier system use cases (or other functional specifications) that are written at a lower level of detail and may only cover part of the business process. The second is a new implementation to describe the business process associated with the collection, analysis and reporting of management information. Both use cases illustrate the full business requirements scope for the GP2GP Release 2.2 Compliance Requirements.

1.1 Further Enquiries

Enquiries about the contents of this document are to be sent to the email address GP2GP@nhs.net

2 Background

The GP2GP record transfer mechanism is required to support the electronic component of a primary care patient record being transferred to a new primary care provider when a patient registers with a new GP practice.

In 2009 an estimated 99.9% of GPs held at least part of their patient records electronically. Less than 20 practices in England do not have a registered software supplier, therefore the potential for fast, efficient electronic transfer and realisation of possible cost savings is large.

In 2009, in excess of 3,600,000[1] patients in England changed their registered primary care provider to a new practice in the UK. With 8320 practices in England this amounts to 427 transfers per practice annually. When this occurs, there is a well known and effective mechanism for the transfer of the paper record (Lloyd George envelope or medical record envelope, MRE) detailing the patient's past care and, more recently, a proven mechanism for transferring these records electronically. However, in order to transfer the electronic component of the patient record using the paper record transfer process, common practice is to produce a printout of the content of the medical record and to put it in the Lloyd George MRE at de-registration. The transfer of the paper record process is owned by the PCT and is triggered by deregistration in NHAIS. Anecdotal evidence shows:

- Increasing amounts of digital information (images, letters etc.) are being stored within the electronic patient record.
- Few doctors study such printouts and that even fewer re-enter any salient information so that it is available to assist future care.

Thus, the increased use of electronic records by GPs to improve the care of their patients has the paradoxical effect of reducing the quality of the patient record passed to future GPs. This situation will persist in a practice until the timely, reliable and effective electronic transfer of records between GP practices is the norm.

The GP2GP messages have been developed and successfully implemented to transfer the electronic component of the patient healthcare record to assist in the continued maintenance of high quality electronic records when a patient moves practice. However significant technical and functional improvements can still be made to this electronic process in order to increase its utilisation and facilitate cost reductions.

2.1 Releases of the GP2GP Compliance Specification

Release 1 was the initial trial release, rolled out nationally. This was quickly followed by Release 1.1 and 1.1a, the latter forming the common baseline of all compliant systems as of end of 2010. Release 1.1a has a number of limitations, specifically in areas of management information collection and support for messages over 5MB or with >99 attachments.

[1] Source: GP2GP Management Information from NHAIS

2.2 Changes introduced in 2.2

There has also been further development to address issues arising from the early GP2GP record transfers leading to the need to support more sophisticated mechanisms for integrating records, for example, where a patient returns to a practice after a spell of absence (known as a Returning Patient) and the transfer of structured information such as Blood Pressure, Drug Allergies with Causative Agent and Clinical Document Metadata in a common form (known as Data Archetypes). To incorporate these, a further release of the GP2GP compliance requirements was published in March 2010 as Release 2.2. This version of the document further refines the Returning Patient functionality (A-B-A) and Data Archetypes.

The full list of changes incorporated in Release 2.2 is:

- 'A-B-A processing': allowing records to be requested and integrated for Returning Patients, giving the user the choice of which record (historic/incoming) to keep.
- Within the context of GP Summary, the preservation of a patient's decision to have a Summary Care Record during GP2GP Transfer.
- Within the context of Patient Access, the preservation of the patient's settings for Patient Facing Services during GP2GP Transfer.
- Preservation of the GP Summary 'include' and 'exclude' flags during GP2GP Transfer.
- Introduction of Large Messaging to accommodate detailed care records in excess of 5 MB and / or with > 99 attachments and / or with files that have MIME types that Spine TMS doesn't support. NB These limits will be change as a result of the Spine refresh too.
- Provision of improved management information, e.g. information is collected at conversation level and shipped to the Authority for analysis.
- Deprecation of Local Safe Exchange Framework (SEF) replaced in favour of an Authority controlled Spine based SEF (already in place).
- Further development of specifications for capture, display and transfer of sets of interrelated data items (Archetypes) allowing a common view and exchange of related data values (e.g. blood pressure).
- Solutions must support the use of one organisation (GP Practice) per ASID – it is not allowable for an ASID to be shared by more than one organisation (GP practice). End Point configurations for solutions must support this concept.
- Deprecation of the positive acknowledgement to confirm receipt of an EHR Request message in 2.2c onwards.
- Reclassification or removal of 'optional' requirements.
- Improve on-screen User Experience through collaborative working with the Authority.
- Addition of requirements to support the reduction of the paper record transfer processes where appropriate.
- Deprecation of Batch, Quarantine and Auto-Extract switch requirements.
- Support the use of the Authority provided code translation mapping tables where code translation is required.
- Deprecation of previous Single Instance Database requirements.
- Formal requirements about "Filing as an Attachment" functionality created in R1.1a.

3 Requirements 'Bundles'

This release replaces the original 2.2 release following further work to elaborate requirements and to clearly identify the new functional components as discrete packages to allow phased implementation. These discrete 'bundles', associated compliance levels and dependencies are illustrated in the table below.

Requirements Bundle	Associated Compliance Level	Dependencies
All Mandatory requirements	All	Must be 1.1a compliant or implement 1.1a with first 2.2a bundle
MI Management Information	2.2a	
UX Error Handling/User Experience		
LM Large Messaging		
PP GP2GP Paper Transfer Decommissioning		
AB A-B-A Handling	2.2b	Must be 2.2a compliant
SC SCR GP Summary include/exclude Flag Handling	2.2c	Must be 2.2b compliant
AR Archetypes		
PS Patient Facing Services		
CT Clinical Coding Translation	All	n/a

The individual requirements in the remainder of this document are either associated with all bundles, i.e. they must be met by all systems intending to be compliant against 2.2a, or with an individual 'bundle'. The bundle identifier or the word 'All' is listed against each requirement.

4 Business Requirements

This section lists the business requirements, i.e. the needs of GP Practices in support of new patient registrations and patient 'deductions'. They specify 'what' features or functions the system needs to provide in order to support the business and as such define the scope of the GP2GP solution. Context and additional detail is provided for these requirements in the two GP2GP use cases [Ref: 2 & 3].

All business requirements are elaborated as one or more 'system requirements' in the following sections.

The following business requirements come from the GP2GP Full Business Case:

Req ID	Requirement Text	Stakeholder
BR01	Electronic Patient Records exist in most GP practices. Transfer of patients between practices should be accompanied by the safe and secure transfer of the electronic healthcare record with a view to: • Speeding up the process of record transfer, • Reducing the cost and risk of error associated with transcription into the receiving GP system, • Reducing the cost of secure transfer of paper record, • Sustaining continuity of care.	The Authority
BR02	Enable improvements in the quality of patient care by providing complete information regarding a patient's history at their first consultation after having changed GP	The Authority
BR03	Improve NHS operational effectiveness in handling GP to GP record transfers such that, the administrative effort involved in transferring a patient's medical records when switching to another GP is reduced	The Authority
BR04	The solution is to encompass the entire process for GP to GP record transfer from the pulling and preparing of a patient's record[2] at the old practice to the incorporation of the record within the information systems of the 'new' GP.	The Authority

The following business requirement is derived from NHS Care Record Service Information Governance principles:

[2] Note that the GP2GP transfer begins with the receipt of a successful update response from PDS, acknowledging a permanent change to the patient's primary healthcare provider and ends with the successful filing and acknowledgement of the transferred data.

Req ID	Requirement Text	Stakeholder
BR05	All aspects of the Care Records Guarantee (see IG Compliance documentation) must be upheld. For GP2GP transfer this specifically, but not exclusively, includes: 1. Providing data protection and confidentiality by implementation of access controls 2. Maintain data accuracy by ensuring that the data before and after the transfer has the same meaning. 3. Provide an audit trail of user access to records. 4. To operate within internationally approved security standards.	Clinicians

Further Business Requirements from the GP2GP Programme:

Req ID	Requirement Text	Stakeholder
BR06	The transfer process must be clinically safe.	Clinicians, Suppliers
BR07	The transfer process must be legal within UK law. The solution should support any regional legislative differences within the four countries making up the UK.	UK Law
BR08	Electronic transfer is to make efficient use of the existing infrastructure and services, where practical, in order to ensure reliability, security and cost effectiveness of the solution.	All
BR09	The free flow of data between legitimate, authorised parties should be upheld. The electronic transfer process must not be impeded by unnecessary manual intervention or failure to be backward compatible with previous GP2GP Compliance Requirement versions	Clinicians
BR10	All data transferred must be accessible and visible to authorised users irrespective of the supplier system being used to access it.	Clinicians
BR11	Message flows within the GP2GP process must be monitored to allow deployment and operational problems to be identified clearly and quickly.	the Authority, Suppliers
BR12	Performance and utilisation of the GP2GP EHR Extract process must be monitored such that process problems can be identified and process improvements made.	the Authority, Suppliers
BR13	The solution to GP2GP is to support other DH IT initiatives and evolution of dependent services where practical.	the Authority
BR14	Solutions connecting to the national infrastructure are to provide reliable, fault tolerant solutions.	the Authority

Req ID	Requirement Text	Stakeholder
BR15	The system supplier shall ensure that the Audit Trail is retained for the entire retention period of the records audited, to enable investigations to be carried out when necessary and provide evidence where required by the Authority. This is defined more specifically as: • 3 years on-line • A further 4 years off-line recoverable within 1 working day (yrs 4 – 10) • A further 20 years off-line recoverable within 1 working week (years 11 – 30) See Statement on data retention [Ref: 21]	the Authority, UK Law
BR16	The solution shall make use of Authority assured clinical code mapping tables when code translation is required. (Note: These are currently provided by the UK Terminology Centre. and cover translation between READ2, CTV3 & SNOMED CT coding schemes).	the Authority
BR17	The solution shall provide tracking of the EHR Transfer process so the Sending practice can determine whether any paper records need to be printed and transferred.	The Authority, Joint GP IT Committee, Clinicians
BR18	The EHR Extract must include structured data[3] for Drug Allergies, Blood Pressure and Document Metadata.	Clinicians

[3] Known as 'Archetypes' in this document.

5 Business & System Processes

5.1 Use Cases

The GP2GP requirements are supported by two business processes defined by use cases:

1. ***GP2GP UC1 Transfer Electronic Healthcare Record*** [Ref: 2]: The transfer of EHR information from one supplier system to another and the execution of logic associated with a patient moving from one practice to another. This use case is an extension of the registration process followed when a new permanent patient registers with a GP practice or a temporary patient becomes a permanent patient. It accounts for scenarios where the practice user may have access to Spine services and when they do not.
2. ***GP2GP UC2 Transfer and Analyse Management Information*** [Ref: 3]: The transfer, processing and reporting of management information regarding GP2GP transfers.

5.2 General System Requirements

The configuration functionality to switch GP2GP service ON and OFF must only be accessible to supplier support staff and must not be accessible to system users. To trigger the use case Transfer Electronic Healthcare Record, the GP2GP service MUST be enabled, i.e. 'ON'. A change of status to the GP2GP service must be reported in the management information.

Req ID	Requirement Text	Req Trace	Bundle
S1	The system shall support all requirements in all Supplemental Specifications listed in the GP2GP Baseline Index which are also illustrated in Figure 1	BR01	All
S2	The system ***shall*** support the process and functions described in GP2GP Use Case 1: Transfer EHR [Ref: 2]	BR01	All
S3	The system shall be capable of switching the GP2GP functionality on/off independently of End Point Registrations for a single General Practice. It shall only be possible for the supplier support service to carry this out. All such changes (On or OFF) to the GP2GP functionality status shall be reported within the management information.	BR06	All
S4	The system shall cease GP2GP processing if a negative acknowledgement code is sent / received whether acting as Requester or Sender. This shall also be recorded in Management Information.	BR01 BR06 BR08	All

Req ID	Requirement Text	Req Trace	Bundle
S5	All errors that prevent a message being sent to its destination (e.g. failure to validate the HL7 XML message payload, ebXML header information incorrect) shall be reported to the user and logged within the audit and management information.	BR11	All
S6	In the event of a messaging failure the system shall provide the ability for a suitably authenticated user to locate and view a previously sent GP2GP message in a suitably rendered form. The user shall also be able to re-send an EHR Extract if required. In such circumstances the EHR Response message must be a duplicate of the original message, i.e. the same HL7 element of the message with same conversation ID but with a new ebXML message GUID and not be re-extracted from the database. Prior to re-sending an EHR Extract the Sending system shall perform the usual PDS checks to ensure that the patient is still registered at the Requesting practice and shall send an appropriate error response if not (see Sending system requirements). The Sending system ***shall*** limit the ability to re-send an EHR Extract to EHR Extracts that have received a negative Application Acknowledgement in response AND for a time-limited period of 12 weeks from the EHR Extract creation date and time. This is known as the EHR Extract Re-send Period and shall be a supplier only configurable parameter in the system.	BR15	All
S7	All processing, apart from the manual acceptance of the EHR Extract, shall be fully automated following a successful PDS update to change the patient's registered practice. The EHR Extract process shall not inhibit other user interactions.	BR09	All
S8	The Requesting system must make an EHR Request in all cases where it is possible to do so. This applies to New Patients and Returning Patients. NB historically some systems have not requested the records of Returning Patients because they were not allowed to integrate them. This is no longer acceptable with the definition of the Returning Patient solution.	BR09	All

5.3 Patient Registration and GP2GP Trigger Conditions

The GP2GP EHR transfer process is only initiated if the patient is making a permanent registration with a practice for primary healthcare medical services provision. Temporary healthcare and other service provision (e.g. for child health services only, for contraceptive service only) do not constitute a reason for GP2GP to be invoked.

In order to trigger the Transfer Electronic Healthcare Record use case, the user must also be authenticated with the Spine (i.e. logged on to the system using an NHS Smartcard). If the user carrying out the registration is not NHS Smartcard authenticated or the Spine PDS service is unavailable, registrations should not be made as the system cannot perform the necessary PDS interactions and may not be able to identify the previous practice before the local NHAIS system updates it. Under these exceptional circumstances, the supplier may provide a high-security function to allow a limited number of registrations to be made but must also inform users that this will prevent the GP2GP process from happening.

Receipt of a negative acknowledgement to an EHR Request always terminates the GP2GP process but audit and management information must be recorded. Any requirement to transfer healthcare records will then revert to the existing manual processes.

Req ID	Requirement Text	Req Trace	Bundle
S10	If the registration is temporary or solely for additional (GMS) services, then this ***shall not*** start the GP2GP process.	BR01 limitation	All
S11	The system ***shall*** only allow patient registrations by users who are Spine Authenticated and who have access to full PDS related functions (e.g. tracing, updates), i.e. patient registrations shall not be allowed when PDS connectivity is unavailable. This will ensure that a patient's previous practice can be looked up on PDS and the new practice can be recorded.	BR08 BR09	All
S13	The system shall support the patient registration process as defined in Compliance Requirements for Patient Registration [Ref: 20]. In addition to this, GP2GP mandates that during the registration process, the Requesting system ***shall*** synchronise with PDS and follow the Recommended PDS Tracing Algorithm, defined in the GP2GP Spine Technical Design [Ref: 19].	BR01	All

Req ID	Requirement Text	Req Trace	Bundle
S14	The system ***shall*** persist locally the previous Health Care Provider (also known as' previous practice') code and date of registration obtained from the initial PDS Advanced Trace Query and ***shall*** obtain the following further details of the previous Health Care Provider from SDS. • Practice Name • Practice Address • Practice Telephone number This information shall be retained as a minimum until the EHR Extract is integrated successfully. The information ***shall*** be retained beyond this point if the EHR Extract is rejected as a manual re-request by telephone may be necessary.	BR08	All
S15	To avoid unnecessary EHR Requests, the Requesting system ***shall*** check the most recent previous Practice Code (obtained from PDS data) against the Practice Code of the registering practice and ***shall*** terminate the GP2GP process if they are the same (i.e. patient already currently registered at the Requesting practice). The transfer process shall also be terminated if the previous practice details are not present on PDS. In both cases the information shall be recorded in Management Information. If the previous practice code matches the code of the Requesting system, the user ***shall*** be informed that the GP2GP Transfer will not be initiated and the user ***should*** also be able to abandon the registration process.		All
S16	After the PDS Advanced Trace, if a previous practice code is present and is not the same as the Requesting practice, the system ***shall*** display the previous practice details (i.e. code, name, address, telephone num, date of registration) to the user.		All
S17	If the user completes the registration process, the Requesting system ***shall*** undertake a PDS General Update to update the PDS 'Health Care Provider' field with the patient's new practice code and date of registration. If the PDS Update is unsuccessful the GP2GP Transfer process ***shall*** terminate and this shall be logged and recorded in Management Information.	BR01	All

5.4 Initiating the EHR Request

The following requirements are specific to the initiation of the GP2GP EHR transfer process and the despatch of the request for the electronic record.

The GP2GP process begins when a successful PDS update has been performed during the registration process. Registration without Spine connectivity must be avoided and only allowed in exceptional circumstances by users with access to this restricted functionality.

The system also has to support the process where a re-send of the EHR Request is manually initiated.

It is worth noting also that some management information is required from the Registration process prior to the triggering of the GP2GP transfer request.

Req ID	Requirement Text	Req Trace	Bundle
S20	The Requesting system ***shall*** identify whether the patient's previous practice's system is GP2GP compliant (i.e. by querying SDS using the previous GP Practice Code and checking for the existence of appropriate GP2GP interactions) and only initiate the GP2GP interaction if the patient's previous practice system (the Sending system) is GP2GP enabled. See GP2GP Spine Technical Design	BR08	All
S21	The Requesting system ***shall*** notify the user, during the registration process and in an appropriate manner, if a GP2GP Electronic Transfer is not possible for any reason. This may take the form of: 1. Providing a positive user confirmation of the request **not** being sent, the reason, the condition raised and what the user should do about it, if anything. 2. Recording errors in workflow, audit and Management Information for future user reference and harvesting of management information.	BR11	All
S22	Removed		AB
S23	Removed	BR06	AB

5.5 Processing a received EHR Request

On receipt of an EHR Request the Sending system must check that the Health Care Provider recorded on PDS is still the one that has requested the EHR Extract. This will be done by performing a PDS

Retrieval using the NHS Number provided by the requesting system. If the Practice Code obtained or derived from PDS does not match the Practice Code of the Requesting practice which sent the EHR Request, then an negative acknowledgement must be returned (see Response Codes [Ref: 18]) and the GP2GP Transfer Process ends.

When building the EHR Extract, the Sending system must take into account requirements contained within 'Guide to Implementing EHR Extract' which is supplied in the appropriate MIM version and also any supplementary specifications identified in Figure 1.

Attachments belonging to a patient's record must be included in the EHR Extract, even if only as a placeholder text file (see Supplementary Specification: Attachment References [Ref: 9]).

The EHR Extract must only be sent once, unless there are problems validating or integrating the received EHR Extract into the Requesting system. The Sending system can re-send a duplicate of the original EHR Extract on manual request by a user of the Requesting system e.g. telephone call. An updated version of the EHR Extract must not be sent, only the original EHR Extract. In addition, prior to any re-send taking place, the PDS check for the current Health Care Provider matching the EHR Extract destination must be performed again.

Once the EHR Extract has been sent, any subsequent paper or electronic data received into the old practice must be managed manually using existing practice processes. The Sending system should track these with a Workflow Manager.

It is possible, but highly unlikely, that the deduction message from NHAIS is received at the old practice prior to a request for the record being received from the new practice. Under these circumstances, the request for the EHR Extract from the patient's new practice must still be fulfilled.

In certain circumstances it may be necessary to return to the EHR that was sent, either for audit or fault analysis reasons. The system must allow controlled access to view (not amend) sent EHR Response messages, either in raw XML format or in a rendered form in the same way as an incoming EHR is previewed.

Also see section below on Exceptional Registration Scenarios

Req ID	Requirement Text	Req Trace	Bundle
S30	The Sending system ***shall*** automatically check the local patient index for the NHS Number supplied on the EHR Request, populating the Application Acknowledgement with response code 06 if the patient is not registered at the practice. See 'GP2GP Response Codes' document [Ref: 18]	BR01 BR06	All

Req ID	Requirement Text	Req Trace	Bundle
S31	The Sending system ***shall*** query PDS to ensure the registered GP Practice details are consistent with the EHR Request before the EHR Response is sent. If the current GP Practice on PDS does not match the Requesting practice the Sending system ***shall*** return a negative acknowledgement with Response code 19 (Requesting practice is not the patient's current primary healthcare provider) as defined in the GP2GP Response Codes document [Ref: 18] and ***shall*** terminate the GP2GP Transfer.	BR05	All
S32	A negative application acknowledgement message ***shall*** also be returned if an EHR Request that cannot be fulfilled for other reasons, including (but not limited to): • Patient not registered with the practice (Response code 06) • GP2GP messaging not enabled (End Point setup but GP2GP configuration switched OFF) (Response code 07) • Failed to successfully create the GP2GP EHR Extract. (Response code 10) This ***shall*** terminate the GP2GP Transfer. Consult Response Codes [Ref: 18] document for a full list of the Negative Acknowledgement codes.	BR11 BR14	All
S33	A positive acknowledgment of receipt of the EHR Request message ***shall not*** be sent to Release 2.2c (or later) compliant systems as this has been deprecated. Note that this is a change to the requirements in Release 1.1a. A positive acknowledgment of receipt of the EHR Request message ***shall*** be sent to Release 1.1a / 2.2a / 2.2b compliant systems.	BR11 BR14	All
S34	A Release 2.2b or earlier positive acknowledgement of receipt of the EHR Request message ***shall not*** be sent until the EHR Extract has been successfully generated and all applicable checks have been passed. Note: This is a change to the 1.1a specification.	BR11 BR14	All
S35	The Sending system ***shall not*** introduce unnecessary delays for the generation and sending of any GP2GP message, including Common Point to Point message except where specified below.		All

Req ID	Requirement Text	Req Trace	Bundle
S36	The Sending system ***shall*** regard the response to an EHR Request as being required immediately (i.e. the system ***shall not*** introduce unnecessary delays for the generation and sending of the EHR Extract). (Note. This ***should*** ensure that the core EHR Extract (HL7) is sent within 20 minutes of the EHR Request being received		All
S37	The Sending system ***shall*** commence the sending of any Common Point to Point messages that form part of an EHR Extract immediately after a "continue" response is received from the Requesting system. All Common Point to Point messages ***shall*** be sent within 24 hours of the EHR Request being received. This means the system may need to vary its sending strategy to send Common Point to Point messages sequentially or in parallel as needed.		LM
S38	There ***shall*** be no user involvement in the transfer process until the point where the received EHR Extract is accepted or rejected by a user on the Requesting system. There ***shall*** be no facility for the user to block the transfer process on the Requesting system or the Receiving system at any time.	BR09	All
S39	If the Sending system has the record locked (e.g. pending report filing) the system ***shall*** still be able to send the EHR Response. The EHR Request ***shall*** take precedence over any other in progress or pending activity. The Sending system ***shall*** inform the user who has the record locked when this occurs.	BR01 BR09	All

Req ID	Requirement Text	Req Trace	Bundle
S40	The Sending system ***shall*** include in the EHR Extract and send automatically all Pathology reports which are matched to the patient record but unfiled. The status of unfiled pathology reports ***shall*** remain unaltered at the Sending system such that they still appear to users at the Sending practice as un-actioned. If an exception occurs that prevents the Sending system including an unfiled pathology report and the report is older than a year (determined by report received date) then the EHR Extract ***shall*** be sent without the report. If an exception occurs that prevents the Sending system including an unfiled pathology report and the report is a year old or less (determined by report received date) then: • The EHR Extract ***shall*** not be sent by the Sending system. • The reason the EHR Extract cannot be sent, comprising both the failure to send an unfiled pathology report <= 1 year old and the detailed business or technical reason the unfiled pathology report could not be sent ***shall*** be highlighted to users against the transfer status of the record in the Sending system. • The failure to send the EHR Extract for this reason alongside the detailed reason the report could not be sent ***shall*** be reported in Management Information by the Sending system. • It ***shall*** be possible to manually resolve the issues with the pathology report that prevented the extract being created and subsequently automatically send the extract at the Sending system.	BR01 BR09	All
S41	All system errors that result in an EHR Extract not taking place ***shall*** be notified to users and recorded in audit and management information.	BR11	All

Req ID	Requirement Text	Req Trace	Bundle
S42	The system ***shall*** make the users aware of any pending EHR Extracts. The system ***shall*** also be capable of reporting to the Authority all EHR Extracts that have not yet been sent in response to an EHR Request (See also the section entitled *Management Information*). The system ***shall*** proactively inform users of and pending EHR Extracts if they have been pending for more than 24 hours.	BR11	All
S43	The system ***shall*** only send one version of the EHR Extract. The system ***shall not*** send any updated EHR Extracts after the initial dispatch but ***shall*** allow a user to trigger a manual re-send.	BR06	All
S44	If the system does not support the Returning Patient solution (R2.2b) the ID of the EHR Extract shall be new, i.e. an existing EHR Extract ID received previously shall not be reused. NB This requirement supports a future move to an enhanced Returning Patient solution.		All
S45	If the system does support the Returning Patient solution (R2.2b) and the extract is for a patient who was previously integrated after the system supported the Returning Patient solution, the received EHR Extract ID ***shall*** be reused when the new Extract is created. If the patient has never had an EHR Extract then a new ID ***shall*** be assigned. If an Extract for the patient was received before the system supported the Returning Patient solution a new ID ***shall*** be assigned. NB This requirement supports a future move to an enhanced Returning Patient solution.		AB/All
S46	Whilst the GP2GP process is still active (i.e. no acknowledgement to the sent EHR Extract has been received and has not timed out), the system ***shall*** provide a facility to re-send a duplicate (except for the ebXML message GUID) of the previously sent EHR Extract. This ***shall*** be triggered by a manual request (e.g. telephone) from the Requesting practice. The Sending system ***shall*** re-request the current Health Care Provider from PDS and ensure that it matches the Requesting practice prior to actually sending, if the Sending practice is not the current healthcare provider, an error is sent [Ref 18: Error 19].	BR06 BR14	All

Req ID	Requirement Text	Req Trace	Bundle
S47	The system ***shall*** send the EHR Extract even if the patient has been deducted from the practice list (for example if an NHAIS deduction has been received or a PDS difference is applied before the EHR Request is received).	BR01 BR02 BR03 BR10	All
S48	The system ***shall*** populate the EHR Extract message taking into account information contained within 'Guide to Implementing EHR Extract' which is supplied in the appropriate MIM/DMS version and also any supplementary specifications which have or will be issued.	BR09	All
S49	The system ***shall*** include all attachments when building the EHR Extract. The system shall consult the current list of MIME Types supported by Spine to decide which are supported. Any Spine TMS unsupported attachment types ***shall*** be dealt with as follows: • Where Large Messaging is not supported: all Spine TMS unsupported attachments ***shall*** be shown as a placeholder text file • Where Large Messaging is supported: all Spine TMS unsupported attachments ***shall*** be sent using the Large Message Protocol See GP2GP Handling Attachment Types [Ref: 4] and Supplementary Specification: Attachment References [Ref: 9]) for other requirements relating to attachments.	BR02 BR10	LM/All
S50	Attachments held in the Principal Clinical System or any 3rd party systems ***shall*** be extracted and included in the EHR Extract. Such attachments ***shall*** be included with a filename extension that is correct for the file type (i.e. .DOC for a MS Word document, .PDF for a portable document format file, .TIF for a tagged image format file, etc) and NOT any vendor specific proprietary filename and .	BR02 BR10	All
S51	Systems ***shall*** detect missing attachments (e.g. attachments which have been removed from the system or are no longer available, attachments which are zero length, failure to retrieve an attachment from a third party document management system or other technical exceptions) and ***shall*** encode these in the Extract as placeholder text. NB These placeholders shall trigger paper processing.	BR17	All

Req ID	Requirement Text	Req Trace	Bundle
S52	The Sending system must add the practice's ODS code and Conversation ID (transfer identifier) into the new placeholder text to identify the source of the placeholder.	BR17	All
S53	The Sending system must propagate placeholders (unchanged) that it has previously received from an incoming GP2GP EHR Extract for this patient. NB These placeholders shall NOT trigger paper processing.	BR17	All
S54	In circumstances where there is no recorded clinical information available to populate any EhrCompositions below the EhrFolder the Sending system ***shall*** write as a minimum a single RegistrationStatement (within an EhrComposition) to record when the patient was accepted for care at the practice.	BR04	All
S55	The Sending system ***shall*** identify empty consultations by the inclusion of a single EhrEmpty statement within the ehrComposition.		All
S56	Where the Sending system generates an ObservationStatement from a record entry where the date presented to the user that was not explicitly contextualised as a clinically relevant date then that date ***shall*** be used to populate the availabilityTime and the effectiveTime ***shall*** be populated as the NI/No Information null flavour.	BR06	All
S57	Where the Sending system generates an ObservationStatement from a record entry where more than one date was presented to the user including a clinically relevant date then that date ***must*** be used to populate the effectiveTime of the corresponding message statement.	BR06	All
S58	Where the Sending system generates compoundStatements that represent PMIP results then availabilityTime ***shall*** be populated from the PMIP report received date.	BR06	All

Req ID	Requirement Text	Req Trace	Bundle
S59	For effectiveTime and availabilityTime dates, the Sending system ***shall*** utilise: - "center" for a single date - "low" and "high" for a date range - "low" to indicate a start date only - "high" to indicate an end date only.	BR06	All
S59.1	Where a record entry contains clinically relevant dates for start and end of an event a sending system ***shall*** generate an ObservationStatement using availabiltyTime for start date and the effectiveTime as an interval with high value only for end time.	BR06	All

5.6 Processing and Acknowledging a Received EHR Extract

The user must be provided with a pre-processed view of the incoming EHR information to allow them to decide whether to integrate the incoming electronic healthcare information or not. The user needs to be able to either accept integration of the record or reject integration of the record and supply a valid reason from Response Codes [Ref: 18].

The original extract message must be retained in its original form for audit purposes whether accepted or rejected (see BR15). This retained copy of the message must be viewable and must provide details of the choice the user made (i.e. accept or reject).

The requesting system must also determine whether the patient is a Returning Patient. If the patient is a Returning Patient and the system is 2.2b compliant then the 'A-B-A' requirements below must be met as well as the non 'A-B-A' requirements which follow.

Also see section below on Exceptional Registration Scenarios

5.6.1 All Scenarios

A full integration of all EHR Extract components received must be made in all situations - a partial integration shall not be an option.

Integration must take account of requirements contained within 'Guide to Implementing EHR Extract' which is supplied in the MIM/DMS) and also any supplementary specifications which have been issued.

- Receiving Systems must de-activate and flag all active repeat medications for the patient so that these can be verified with the patient and re-authorised by a suitably qualified person (e.g. GP, reviewing clinician).

- Receiving Systems must flag any current medications that have been degraded to text to allow for a suitably qualified user (e.g. GP, clinician) to re-code any that are clinically appropriate.
- Where any Drug Allergies have been degraded on import, systems should prevent the prescribing of any medication for the patient until the degraded items have been either recoded or removed from the record.

The acceptance of the EHR Extract by the Requesting practice must trigger an acknowledgement. This acknowledgement shall be sent after the Requesting practice has completed the GP2GP process (for example: attempted to integrate the extract). A positive acknowledgement must only be sent if the received EHR Extract has been fully integrated into the patient record. This includes integration in the Returning Patient scenario. However, filing as an attachment or rejection or any other failure to integrate any part of the record must result in a negative acknowledgement being sent with an appropriate Response code (see Response Codes [ref: 18]). If a user rejects the record the user's coded reasons (see Response Codes [ref: 18]) for not integrating the record need to be placed in the negative acknowledgement.

Also see section below on Exceptional Registration Scenarios.

Req ID	Requirement Text	Req Trace	Bundle
S60	If an EHR Extract is received for a patient who has already had an extract integrated for the current registration the Requesting system ***shall*** send a negative Application Acknowledgement with the Response code 12 [Ref: 18].		All
S61	The Requesting system ***shall*** provide the user with a pre-processed view of the incoming EHR information to allow them to decide whether to integrate the incoming electronic healthcare information or not.	BR17	All
S62	The Requesting system ***shall*** allow the user to either accept integration of the record or reject integration of the record and supply a valid reason. The Requesting system ***shall*** force the user to supply a valid reason from the valid Response codes [Ref: 18].	BR17	All
S63	The system ***shall*** retain the sent and received messages in their original form for audit purposes including whether each EHR Extract was accepted or rejected. This retained copy of the message ***shall*** be viewable and ***shall*** provide details of the choice the user made (i.e. accept or reject). The messages ***shall*** be retained according to the data retention requirements (See BR15), together with user_id, user selection, configuration or action that may determine how the integration (or otherwise) was performed for audit purposes.	BR15	All

Req ID	Requirement Text	Req Trace	Bundle
S64	The system ***shall not*** allow any amendment to the EHR prior to its integration into the system.		All
S65	The Requesting system ***shall*** provide a facility to preview the received EHR Extract together with contact details of the previous practice prior to integration. The system ***shall*** allow a user with appropriate privileges to: **For a Non-Returning Patient at a R2.2a compliant or later system** • Accept and integrate the EHR Extract *[default on-screen]* • Reject the EHR Extract due to the wrong patient being selected at registration or wrong record received **For a Returning Patient at a R2.2a compliant system** • Reject the EHR Extract and file as attachment • Reject the EHR Extract due to the wrong patient being selected at registration or wrong record received **For a Returning Patient at a R2.2b compliant or later system** • Accept and integrate the EHR Extract, suppressing the patient's historic EHR *[default on-screen]* • Reject the EHR Extract and Store it as an Inactive Record (suppressed), reactivating the patient's historic EHR • Reject the EHR Extract due to the wrong patient being selected at registration or wrong record received NB Filing as an Attachment for a Non-Returning Patient is deprecated within an R2.2a or later compliant system. Rejection other than for wrong patient/wrong record or preferring reactivation of the historic record is not allowed. These are to minimise the number of broken chains of electronic transfers. For the avoidance of doubt, the above list of items is the only allowable outcomes.	BR06 BR12	All
S65.1	R2.2b compliant or later systems ***shall*** be capable of disabling the option to reject the EHR Extract and Store it as an Inactive Record (suppressed). This must be a setting available only to the supplier which must be modified at the authority's request and must be applied to the whole supplier estate.		All

Req ID	Requirement Text	Req Trace	Bundle
S66	The Requesting system shall only return an 'AA' Application Acknowledgement if it has successfully integrated the main EHR Extract and ALL attachments sent (including any sent via Large Messaging and any sent as placeholders). For the avoidance of doubt: A. Storing the Returning Patient's Extract as an inactive suppressed record in the Requesting system ***shall not*** be considered integration for the purposes of these system requirements. B. The only indicator of successful full integration of the EHR Extract and attachments (where sent) into the Receiving system shall be a positive Application Acknowledgement to the EHR Extract message.	BR17	All
S67	If the Requesting system successfully fully integrates an EHR Extract it ***shall*** generate and return a positive application acknowledgement.	BR17	All
S68	If the Requesting practice cannot process any part of the EHR Extract it ***shall*** return a negative application acknowledgement.	BR12	All
S69	The Requesting system ***shall*** handle an unexpected failure to integrate the EHR Extract when a user attempts it by returning Response Code 11 in the Application Acknowledgement and capturing the result in Management Information.		All
S70	The Requesting system ***shall*** reject Large Messages when the timeout duration has been reached or an overall transfer that includes Common Point to Point messages. (see Large Messaging supplementary specification)		LM
S71	If the Requesting system fails to process the main EHR Extract, whether sent by Large Messaging or not, it ***shall*** return a negative Application Acknowledgement with Response code of 11 (see Response Codes [Ref: 18]).		All

Req ID	Requirement Text	Req Trace	Bundle
S72	If it is a Non-Returning Patient, the Requesting system ***shall not*** allow the user to file the EHR Extract as an attachment. If it is a Returning Patient scenario where A-B-A functionality is NOT supported, the Requesting system shall allow the user to file the EHR Extract as an attachment (and any other associated attachments) and the Requesting system ***shall*** return Response code 26 (see Response Codes [Ref: 18]).		All
S73	If in a Returning Patient scenario where A-B-A functionality is supported by the Requesting system, the following ***shall*** occur: • The Requesting system ***shall not*** allow the user to file the EHR Extract as an attachment. • If the user does not wish to integrate the Extract because the wrong patient or wrong record was received, the Requesting system ***shall*** return Response code 17 (see Response Codes [Ref: 18]). • If the user does not wish to integrate the Extract but does want to store and suppress the Extract, the Requesting system ***shall*** return Response code 15 (see Response Codes [Ref: 18]).		AB
S74	If the Requesting system does not receive one or more attachments sent via Large Messaging, the system ***shall*** return Response code 31 (see Response Codes [Ref: 18]) in a negative Application Acknowledgement to the EHR Extract and ***shall not*** provide the user with the ability to integrate the EHR Extract.		All
S75	The Requesting and Sending systems ***shall*** provide a logical Inbox, Sent Items and Outbox for users to view the status of EHR Requests and EHR Extracts involved in EHR Transfers and ***shall*** clearly indicate the transmission status, acknowledgement status and integration status as appropriate The inbox view ***shall*** clearly indicate items requiring user intervention, e.g. EHR Extracts requiring integration, EHR Requests requiring action to enable the Extract to be sent.		All
S76	The Requesting and Sending systems ***shall*** provide the ability to re-order and filter the Inbox, Sent Items and Outbox by patient, any of the statuses above, date, etc.		All

Req ID	Requirement Text	Req Trace	Bundle
S77	The Requesting and Sending systems ***should*** provide the ability to search the Inbox, Sent Items and Outbox for EHR Requests/Extracts relating to specified patients or date ranges or statuses.		All
S78	The EHR Extract integration ***shall*** be triggered by a user.	BR03	All
S79	Users with appropriate privileges ***shall*** be made aware, through the user interface, of EHR Extracts in the Inbox that need integration. The system ***shall*** notify users who are allowed to integrate EHR Extracts (see RBAC section) how many EHR Extracts are awaiting integration when they login to the system. The system ***should*** provide facilities to raise additional escalation alerts if EHR Extracts have not been processed within a configurable time period since their receipt (e.g. 2 days). The system ***shall*** exclude EHR Extracts older than 3 months from the escalation alerts to prevent overwhelming the GP practice with historic notifications at the point of deployment of this requirement.	BR03	All
S80	If a user accepts the EHR Extract for integration, the system ***shall*** process all the elements within the EHR Extract and ***shall***: • Convert incoming clinical codes from that of the Sending system to that of the Receiving system (using approved mapping tables or use of translations as instructed by the Authority's interoperability team.) • Degrade appropriately, codes for which a mapping does not exist. This ***shall*** be in accordance with the GP2GP Supplementary Specification: Structured Degrade Handling [Ref: 6] Note that this requirement applies at the point of user selecting to integrate which is prior to any decision to store and suppress the received extract or make active in a returning patient scenario.	BR06 BR16	CT
S81	The system shall only allow a full integration to be made and shall not present the user with any partial integration options.	BR06	All
S82	Systems ***shall*** de-activate all active repeat medications on import into the active record and flag them for manual processing. Such flags ***should*** be readily visible to, and/or brought to the attention of, clinicians processing the medication records so that these can be verified with the patient and re-authorised.	BR06	All

Req ID	Requirement Text	Req Trace	Bundle
S83	Systems ***shall*** flag any current medications that have been degraded on import into the active record so that clinicians can re-code any that are clinically appropriate.	BR06	All
S84	Where any Drug Allergies have been degraded on import into the active record, systems ***shall*** prevent the prescribing of any medication for the patient until the degraded items have been either recoded or removed from the record.	BR06	All
S85	Once an EHR Extract has been successfully processed, systems ***shall*** prevent the EHR Extract being processed (imported) again. However, if an EHR Extract failed to import successfully, the Requesting system ***shall*** be able to process a manually re-requested EHR Extract (See Requirement S43)	BR06 BR09	All
S86	Once an EHR Extract has been successfully processed, Requesting systems ***shall*** identify to the users any missing attachments where placeholders were included and line 3 of the placeholder file matches the ODS code of the Sending practice and the ConversationID for this transfer. The Requesting system ***shall*** allow users to access this information indefinitely.	BR06	All
S87	Where a scanned physical printout contains enough metadata to match with a received placeholder identified in the previous requirement, the Requesting system ***shall*** identify to the user the match and offer replacement of the placeholder with the scanned document. The Requesting system ***shall not*** replace the document without authorisation from the user.	BR06	All
S88	Where a system supporting a single date for a record entry processes an ObservationStatement providing both availabilityTime and effectiveTime then the system ***shall*** display that effectiveTime as the single available date.	BR06	All
S89	When a system that supports multiple dates processes an ObservationStatement containing a single date this ***shall*** be used to populate the same record entry element that would map to the availabilityTime in an outgoing ObservationStatement generated from that entry.	BR06	All

Req ID	Requirement Text	Req Trace	Bundle
S89.1	Where a system includes an imported date in the text element of a record entry from an imported ObservationStatement then this date shall be included before any other associated text or qualifiers.	BR06	All
S89.2	Where a system supporting a single date for a record entry processes an ObservationStatement providing start and end dates for an event it shall display only availabilityTime as the clinically relevant date for the entry and shall add effectiveTime as associated text in the format 'Ended on: < effectiveTime>'.	BR06	All
S89.3	Where a requesting system supporting a single date for a record entry processes a RequestStatement representing a referral the requesting system shall use the availabilityTime as the date for the record entry and shall retain effectiveTime (if present) as text	BR06	All

5.6.2 A-B-A Scenario

A-B-A is the term given to the scenario of a patient leaving Practice A, registering at one or more practices, e.g. Practice B (C,D...) and then returning to the Practice A (or a system sharing the database with Practice A) at some point in the future. The EHR for this patient will have been enhanced at Practice B (and others). The Requesting system at Practice A must identify that the patient has been previously registered with them and request the EHR. When the EHR Extract arrives, the Requesting system will provide the user with the option to integrate the EHR received from the Sending system and suppress the patient's previous EHR OR Reject the EHR received and re-activate the patient's previous EHR OR Reject the EHR because it is for the wrong patient or is the wrong record and re-activate the patient's previous EHR..

At the time of writing around 5-10% of GP2GP transfers are A-B-A scenarios. Under release 1.1a requirements existing suppliers process these transfers by either filing the EHR Extract received as an attachment to the re-activated historic record or simply by not requesting the EHR Extract in the first place, neither of which are considered clinically safe or are losing the patient benefits.

Any A-B-A compliant system receiving EHR Extracts for a Returning Patient must identify to the user that this is a returning patient with an existing record and provide a preview of the old record and new record (e.g. side by side) by rendering the new and old EHR Extracts in a suitable form.

The system must record all the user choices for audit purposes (see BR15).

Req ID	Requirement Text	Req Trace	Bundle
S90	The Requesting system ***shall*** identify a returning patient (known as an A-B-A scenario) by using the local index(es), not PDS. A Returning Patient is: • A patient who has an existing permanent patient record within the system prior to this registration. This ***shall*** apply whether the patient: • Was previously registered at this practice • Was previously registered at this practice with another system (data migration) • Was previously registered at a practice that has merged with this practice • Has a record that is held within the system but is associated with another practice supported by the system (e.g. a shared database for multiple practices where only one record is allowed per patient) • Has any combination of the above. The handling of a returning patient ***shall*** be supported by meeting the requirements within 'GP2GP Supplementary Specification: Handling A-B-A transfers' [Ref: 11].	BR09	AB
S91	Removed		AB
S92	Removed		AB

Req ID	Requirement Text	Req Trace	Bundle
S93	A system implementing A-B-A functionality ***shall*** track Human Generated Changes (HGC) to a patient's record and assign unique identifiers (GUID) to each piece of information. When any information changes, the change ***shall*** be tracked and identified as relating to the previous value of the information. A-B-A changes ***shall*** include additions, updates and deletions to ensure any changes can be propagated to new GP Practices when the patient moves. The Sending system ***shall*** populate the EhrStatement ID values with the GUID and where a Human Generated Change has been performed, include a replacementOf and StatementRef and set its ID to the original GUID of the piece of information. If a deletion has occurred, the Sending system ***shall*** utilise the EhrEmpty statement type with the new GUID and a replacementOf and StatementRef with its ID set to the original GUID. Once a replacementOf StatementRef ID has been set to the original GUID value the Sending system ***shall not*** change this value. Note this is to support a future "gold standard" Returning Patient solution.		AB
S94	The Requesting system ***shall*** identify a patient returning to the GP practice with the Local Patient Index (LPI) and ***shall*** synchronise the patient details including the NHS Number with PDS before making an EHR Request.		AB
S95	The Requesting system ***shall*** utilise the DMS 1 GP2GP message set where DMS 1 GP2GP messages are supported by both the Requesting and Sending systems. Support for DMS 1 GP2GP messages ***shall*** be determined by querying SDS.		AR
S96	Removed		

Req ID	Requirement Text	Req Trace	Bundle
S97	The Requesting system ***should*** provide a side by side preview of the received EHR Request in a suitably rendered form (i.e. not raw XML) for the user to review. The user ***shall*** be able to accept or reject the EHR Extract in its entirety for integration into the existing EHR. Acceptance shall suppress the previous historic record. The system ***shall*** force the user to supply a valid reason from the valid Response codes [Ref: 18] if the EHR Extract is rejected.	BR17	AB
S98	Removed		AB
S99	Systems ***shall not*** degrade transfers to MIM 3 when a DMS 1 EHR Request has been received.		AR

5.7 Exceptional Registration Scenarios

There are certain exceptional, but nevertheless possible, registration scenarios that can cause problems for GP2GP. Those that are considered here are where a patient leaves Practice A, registers at Practice B and then very soon thereafter (e.g. the next day) registers at Practice C. The variations (timings) in this are considered below and recommended actions are listed for each.

All commence with the patient being registered at Practice A and the action described is, unless otherwise stated, for Practice B's system.

Scenario 1: A Request is received for a patient who has an Extract pending integration.

Description

Patient registers at Practice B. B sends EHR Request to A. A sends the EHR Extract to B which arrives later that day and sits in the Inbox at B. Next day the patient registers at C and as Practice B's system has updated PDS, C sends an EHR Request to B which hasn't yet integrated the Extract from A.

Recommended Action (for System B)

The system ***shall*** detect that an EHR Request has been received for a patient who's Extract has been received but has not been integrated.

Either: The system ***should*** integrate the pending Extract automatically and then create a new Extract for practice C and send it. (Note: If the system is a pre 2.2b systems it must send an Application Acknowledgement back indicating that it will send an Extract. If it is a 2.2b or later system it will not send an Application Acknowledgement and will wait until it is able to create the Extract).

Or: The system ***may*** instruct the user to perform the integration and then automatically create the Extract and sends it to C. (Note: same notes as above option apply)

Scenario 2: A Request is received for a patient for whom an Extract has been requested.

Description
Patient registers at Practice B. B sends EHR Request to A. Next day the patient registers at C and C sends EHR Request to B which hasn't yet received the Extract from A. A will check the patient's registered practice at some point – in this case it is assumed that when it checked PDS it said the patient is still registered at B but there has been a delay in messaging that has prevented the Extract being sent – however it still sends it to B.

Recommended Action (for System B)
The system ***shall*** detect that an EHR Request has been received for a patient for whom it has requested an Extract but not yet received it.

Either: The system ***should*** integrate the Extract automatically when it is received and then create a new Extract for practice C and send it. (Note: same as Scenario 1 above)

Or: The system ***may*** instruct the user to perform the integration when it is received and then automatically create the Extract and sends it to C. (Note: same as Scenario 1 above)

Scenario 3: A Request is received for a patient for whom an Extract has been requested.

Description
Patient registers at Practice B. B sends EHR Request to A. Next day the patient registers at C and C sends EHR Request to B which hasn't yet received the Extract from A. A delay at A (for whatever reason) means that when A checks the patient's registered practice on PDS it indicates the patient is registered at C and therefore A sends a negative Application Acknowledgement to B indicating the patient if not registered at B (see Response Codes [Ref:18]).

Recommended Action (for System B)
The principle of maintaining an unbroken chain of EHR transfers for the patient's record will dictate the resolution to this scenario. The system ***shall*** detect that an EHR Request has been received for a patient for whom it has requested an Extract from A, but has received a negative Application Acknowledgement (rejection – patient not registered at B – Response code 19).

Action: The system ***shall*** send a negative Application Acknowledgement to C indicating that it does not have an EHR to send (Response code 99 – Unexpected condition) and the paper transfer manual process ***shall*** be reverted to.

And: The paper transfer manual process ***shall*** be reverted to.

Scenario 4: Broken registration sequence.

Description

Patient registers at Practice B. B does not immediately process the paper registration form. Next day the patient registers at C and C sends EHR Request to A (because B didn't get around to processing the registration form yet) who generates the Extract and sends it to C.

Practice B then process the form and discover that the patient's PDS practice is not the one they wrote on the form.

Recommended Action (for System B)
The system ***shall*** display the practice details retrieved from SDS following the PDS lookup and present these to the user performing the registration who can see that they do not match the registration form. The user should end the registration process – PDS ***shall not*** be updated by the system.

5.8 GP2GP Transfer Status Recording

It is important for Practices to monitor the status of the GP2GP transfer process from the point of registration through to record integration for both Requesting and Sending system scenarios. It is recognised that there are many components to this, e.g. the status of the patient record itself and the status of the various messages used to transfer the EHR over TMS. This section recognises these differences and systems are required to monitor both the record status and message status.

Req ID	Requirement Text	Req Trace	Bundle
S100	The Requesting system ***shall*** record, for each permanent patient registration, the current state of the GP2GP Transfer as one of the following: • Not applicable: the patient's previous practice does not support GP2GP record transfer. • Not applicable: the patient's previous practice shares the same patient database or the patient has no previous practice recorded. • EHR Requested: the patient's EHR has been requested from the patient's previous practice • EHR Request Acknowledged: If the Sending system is using MIM 3 messages an Application Acknowledgement will always be returned. If the Sending system is using DMS 1 messages a positive Application Acknowledgement will not be returned – it will either send a negative Application Acknowledgement or send the EHR Extract. • EHR Request Rejected: the Sending system has rejected the EHR Request. (see Response Codes [Ref:18]) • EHR Extract Received in Full: all messages containing parts of the EHR (as indicated by the Sender) have been received		All

Req ID	Requirement Text	Req Trace	Bundle
	• EHR Extract Received – Partial: the main EHR Extract (HL7) has been received but one or more attachments sent by the Sender have not been received. • EHR Extract Receipt Failure: a failure has occurred that has prevented the EHR Extract from being integrated • EHR Extract – Time Out: not all messages containing the EHR have been received in the expected time (also see Large Messaging supplemental specification) • EHR Extract – Fully Integrated: the EHR Extract has been fully received and fully integrated. (NB Attaching the Extract as an attachment to the patient record cannot be classified as 'fully integrated') • EHR Extract – Attached: The EHR Extract could not be integrated but has been attached to the patient record for reference. • EHR Extract – Stored and suppressed: The EHR Extract has been rejected, stored and suppressed, reactivating the patient's historic record. • EHR Extract Integration Failure: the EHR Extract was successfully received but a failure occurred when attempting to integrate the Extract. • EHR Extract Rejected by System: the system has not been able to attempt integration (e.g. the patient record is not present in the system) • EHR Extract Rejected by User: a user has decided not to integrate the record.		
S101	The Requesting system ***shall*** record and display the date and time on which the EHR transfer state was set.		All
S102	The Requesting system ***shall*** make failure information available in a suitable form along with the EHR Transfer state, e.g. a suitable Plain English representation of a response code indicating rejection by the Sender.		All
S103	The above information ***should*** be available within the normal Patient Registration 'module' of the system and ***shall*** not be limited to the 'MHS' part of the system.		All

Req ID	Requirement Text	Req Trace	Bundle
S104	The Requesting system ***shall*** also store details of the patient's previous practice: • The national Practice Code, Name, Address and Telephone number ***shall*** be accessible from the usual Registration module • The previous practice's details retrieved from SDS (e.g. ASID, PartyKey, GP2GP messaging supported, Large Messaging, A-B-A supported) ***shall*** be accessible within the MHS functionality of the system		All
S105	The Sending system ***shall*** record for each patient for whom an EHR Request has been received the following EHR Transfer states: • EHR Request Accepted for a leaving patient: patient is permanently registered or recently deducted (within the last 7 days) at another practice and GP2GP is enabled EHR Request Rejected: a variety of rejection reasons exist (see Response Codes [Ref: 18]) • EHR Extract Created: the Extract has been fully or partially created (e.g. not all attachments could be included) • EHR Extract Creation Failure: an error occurred during creation which has prevented the Extract from being sent. • EHR Extract Sent: the Extract has been passed to the MHS for delivery. • EHR Extract Send Failure: the MHS has failed to successfully send the one or more messages that comprise the EHR Extract • EHR Extract Integration Success: a positive Application Acknowledgement has been received from the Requesting system. • EHR Extract Integration Error: a negative Application Acknowledgement has been received from the Requesting system indicating some sort of failure (See Response Codes [Ref: 18].		All
S106	The Sending system ***shall*** record and display the date and time on which the EHR transfer state was set.		All

Req ID	Requirement Text	Req Trace	Bundle
S107	The Sending system ***shall*** make failure information available in a suitable form along with the EHR Transfer state, e.g. a suitable Plain English representation of a response code indicating rejection by the Sender.		All
S108	The Sending system ***shall*** create, for each EHR Extract requested, an inventory list that comprises the main HL7 Extract and each of the attachments. The system ***shall*** provide mappings between each inventory item and its associated message(s) so that in the event of any transfer failure it is possible for a Practice to determine which items have not been successfully integrated by the Requesting system (see also GP2GP Paper Transfer Decommissioning/Reduction)		All
S109	The MHS part of the system ***shall*** also record details of any EHR Requests for patient's not present on the system for which a negative Application Acknowledgement was returned.		All

Req ID	Requirement Text	Req Trace	Bundle

S110	The MHS part of the Requesting/Sending system ***shall*** indicate the status of an EHR Extract and individual messages that are used to transfer the EHR as follows:
	• For every individual message sent:
	  ○ date and time sent
	  ○ the sent status (i.e. HTTP response)
	  ○ the ebXML acknowledgement status - positive, negative
	  ○ the Application Acknowledgement status (where applicable) including error response codes
	• For EHR Extracts sent
	  ○ Whether the HL7 component was sent in the EHR Extract message or via Large Messaging (i.e. the Common Point 2 Point message)
	  ○ How many attachments were associated with the Extract
	  ○ Which attachments were sent in the EHR Extract message and which were sent via Large Messaging
	  ○ Whether this was a manual re-send or an automated send.
	• For content sent using the Large Messaging 'Chunking' functionality:
	  ○ The status of the receipt by the Requesting system (i.e. chunked file has been successfully (or not) reconstructed at the other end).
			All

S111	Any failure to complete a GP2GP EHR Transfer, i.e. that results in the process terminated or a negative Application Acknowledgement being returned by the Requesting system, ***shall*** be logged and proactively notified to a responsible user. This applies to both Requesting and Sending systems		All

5.9 GP2GP Paper Transfer Decommissioning / Reduction

It is now within the scope of the GP2GP record transfer project to reduce the burden on sending practices, of printing out the EPR and attachments. The following requirements indicate the circumstances where the sending practice is no longer obliged to print out the EPR and its attachments and place these in the Lloyd George envelope (or its equivalent). The default position continues to be to print out the EPR and attachments.

N.B. The Lloyd George envelope (or its equivalent) must in all circumstances continue to be returned to the PCO when requested – whether or not the EPR and attachments have been printed out or not.

Req ID	Requirement Text	Req Trace	Bundle
S120	The Sending system ***shall***, by examining the Application Acknowledgements received in response to the EHR Extract (and any Large Messaging Protocol messages) being sent, determine the EHR Extract Integration state on the Requesting system and ***shall*** flag the sent EHR Extract on the Sending system accordingly with supporting information as appropriate (e.g. unsent attachments). The Sending system ***shall*** also flag the EHR Extract if any paper processing is required as a result of: • a failed integration by the Requesting system • failure to send some attachments resulting in placeholders being added to the EHR Extract • failure of the Sending system to send or the Requesting system to receive, any Large Messaging Common Point to Point messages, which is also considered an overall failure of the EHR Transfer	BR17	PP

Req ID	Requirement Text	Req Trace	Bundle
S121	The Sending system ***shall*** support the following integration states: 1. Fully Integrated: The Sending system has sent all attachments and the EHR Extract via GP2GP and these have been successfully integrated into the Requesting system. 2. Fully integrated with placeholders: The Sending system has been unable to send all attachments but the EHR Extract (sent with 'placeholders' for each unsent attachment) has been successfully integrated into the Requesting system. 3. Partial Delivery and Not Integrated: The Requesting system has received the main EHR Extract message but has not received one or more of associated Large Messaging Protocol messages either because it failed to receive it or it failed to reconstitute it. 4. Integration Failure: The Requesting system has not integrated the EHR Extract into its clinical system. 5. Successfully Sent and Awaiting Acknowledgement: The Sending system has sent all the messages for the EHR Extract including Common Point to Point messages to the Message Handling Service but has not received a positive or negative Application Acknowledgement for the EHR Extract. See Response Codes [Ref: 18] for full list of failure reasons.	BR17	PP
S122	For each EHR Extract with an Integration state of 2, 3 or 4, the Sending system ***shall*** flag the EHR Extract as requiring either Full Paper Transfer or Partial Paper Transfer as follows: • State 2 indicates printing of all attachments is required, not just the items that had placeholders sent (Partial Paper Transfer). • States 3 and 4 indicate printing of the EHR Extract and attachments is required (Full Paper Transfer). For State 2, where the Sending system can track which attachments had placeholders sent instead, the Sending system ***may*** indicate printing is ONLY required for the attachments that had placeholders sent in their place.	BR17	PP
S123	For each EHR Extract with an Integration state of 5, the paper transfer flag ***shall*** indicate printing (Full or Partial Paper Transfer) of the EHR Extract is not required yet.	BR17	PP

Req ID	Requirement Text	Req Trace	Bundle
S124	When the Sending system determines that it has been 8 days since the EHR Extract HL7 message was sent and no response has been received, the Sending system ***shall*** update the Integration state to 4 (Integration Failure).	BR17	PP
S125	For an EHR Extract with an Integration state of 1, the paper transfer flag ***shall*** indicate that no paper printing is required.	BR17	PP
S126	The Sending system ***should*** generate a user task in an internal Workflow Manager system for the Paper Transfer actions needed. It ***shall*** be possible, either automatically or manually, for the paper transfer flag to be updated to indicate that the work item has been performed.	BR17	PP
S127	The Sending system ***shall*** clearly identify that any Paper Transfer processing resulting from this GP2GP EHR Transfer process has: a) Nothing to do with the transfer of any paper records not within the EHR or b) The statutory requirement to return the Lloyd George envelope or medical record envelope (MRE) to the PCT or other parent administrative organisation.	BR17	PP
S128	When General Practice users or the General Practice systems try to add documentation (e.g. results or letters) to the patient's record within the Sending system after the EHR Extract has been sent, the Sending system ***shall*** inform the user or General Practice users to forward this documentation to the patient's new General Practice by existing manual processes. The Sending system ***should*** provide the user with the new General Practice's details stored in S104.	BR17	PP

6 System Prerequisites

This section lists the system requirements, i.e. 'how' systems are required to support the business requirements and 'how' systems must interact with national services in support of these. All requirements are mandatory unless a formal agreement to the contrary is in place with The Authority.

All system requirements are traced to business requirements. Numbers in square brackets represent the requirement reference in the preceding versions of this document.

6.1 Regulatory and legislation compliance

A system wishing to use any of the services provided by the NCRS must first be compliant with the core services and all appropriate legislation, regulations, national and international laws related to healthcare systems.

Req ID	Requirement Text	Req Trace	Bundle
S130	The system ***shall*** comply with all appropriate legislation, regulations, national and international laws related to healthcare systems. The overarching requirement to remain within the law has precedence over this document. Where a supplier identifies conflicts between this specification and legal requirements (e.g. due to changes in the law) they are to contact the Authority to seek advice on how they should comply with the change in legislation. The Authority may subsequently issue an update to this document as a result.	BR05 BR07	All

6.2 Information Governance

The documented Information Governance (IG) requirements are dependent upon the contract with the supplier. There are two relevant contracts:

- LSP – where requirements are defined within the OBS schedules.
- ESP/GPSoC - where requirements are defined within the document: *IG Compliance Foundation Module-baseline Index* as defined in the GP2GP R2.2 Compliance Module - Baseline Index.

6.2.1 Patient Consent

The status of a patient's consent value in PDS or the Summary Care Record preferences in ACS has no affect on the GP2GP process, i.e. the GP2GP process shall be supported irrespective of any consent or SCR preference values. The electronic transfer of a patient's record between Practices is an existing business process and existing business processes are not affected by such consent flags.

6.2.2 Data Hiding, sealing and locking

The GP2GP transfer process does not currently support the transfer of any form of data hiding, sealing, locking of local access restrictions applied to data associated with an individual patient record.

6.2.3 User Authentication

All users of GP2GP functionality must be registered on the Spine User Directory (SUD) and authenticated with the Spine Security Broker (SSB) before any GP2GP related interactions with any Spine service can take place. Users must also be logged in with an appropriate role and business activities that allow them access to GP2GP functions within the GP system.

Req ID	Requirement Text	Req Trace	Bundle
S140	The system ***shall*** comply with the authentication requirements as defined by the appropriate version of the *IG Compliance Foundation Module-baseline Index* as defined in the GP2GP R2.2 Compliance Module - Baseline Index.	BR05 BR08	All
S141	The system ***shall*** ensure that only users who are authenticated with an appropriate RBAC role and business activities have access to GP2GP functionality within the system.		All

6.2.4 Role Based Access Control (RBAC)

There has been considerable confusion around the implementation of RBAC roles & activities within the context of GP2GP. This section clarifies the RBAC requirements around in the context of the GP2GP transfer process.

The full GP2GP business process starts at the point where a patient wants to register at the surgery and ends when the GP2GP electronic record transfer is complete and acknowledged to the Sending practice. Within this there are four areas of human interaction that require RBAC Activity mappings:

1. A user registers a permanent patient
2. A user accepts or rejects the received EHR Extract for integration into the patient's record
3. A clinical user recodes degraded items and/or re-authorises medications
4. A user manually re-sends an EHR Extract

The first three of these are performed by the Requesting practice, the last by the Sending practice through manual process e.g. a phone call. All other activities within the GP2GP process are automatically performed by the systems.

The business activities chosen are based on stakeholder discussions which have identified that:

- Receptionists rarely process patient registrations and this is actually done by Administrators
- Clinicians rarely perform the integration or rejection of the EHR Extract and but do perform the recoding and re-authorisation activities

The interactions are summarised in Figure 3 below:

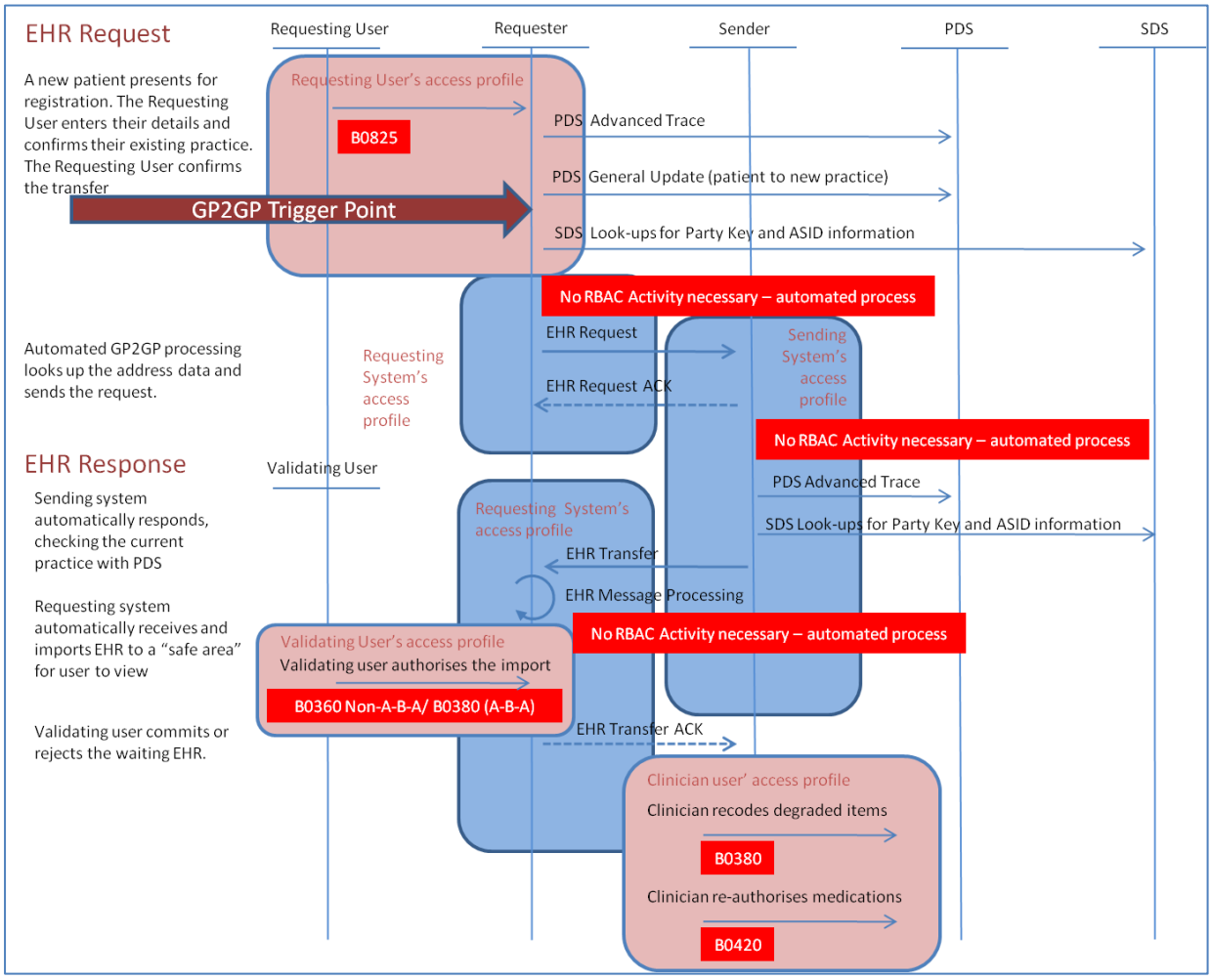

Figure 3 – The system interactions and the RBAC activity usage

Req ID	Requirement Text	Req Trace	Bundle
S150	The System ***shall*** comply with the RBAC requirements as defined within the *IG Compliance Foundation Module-baseline Index*	BR05 BR08	All
S151	The following requirements ***shall*** apply when the user is authenticated using the NHS Smartcard.		All
S152	The system ***shall*** limit access to perform permanent patient registrations, PDS Advanced Trace and PDS General Update interactions to users with the RBAC Business Activity B0825 – Amend Patient Demographics.	BR05 BR08 BR10	All
S153	In a non Returning Patient scenario, the system ***shall*** limit access to	BR05	All

Req ID	Requirement Text	Req Trace	Bundle
	accept the integration of the EHR Extract or reject the received EHR Extract to users with the RBAC Business Activity B0360 – View Detailed Health Records.	BR08 BR10	
S154	In an Returning Patient scenario, the system ***shall*** limit access to accept the integration of the EHR Extract or reject the received EHR Extract to users with the RBAC Business Activity B0380 – Perform Detailed Health Records.	BR05 BR08 BR10	All
S155	The system ***shall*** limit access to recode degraded imported items of the EHR Extract to users with the RBAC Business Activity B0380 – Perform Detailed Health Records.	BR05 BR08 BR10	All
S156	The system ***shall*** limit access to re-authorises medications imported from the EHR Extract to users with the RBAC Business Activity B0420 – Independent Prescribing.	BR05 BR08 BR10	All
S157	The system ***shall*** limit access to re-send EHR Extracts to users with the RBAC Business Activity B0825 – Amend Patient Demographics.	BR05 BR08 BR10	All

6.3 Spine Services

6.3.1 Personal Demographic Service

The Personal Demographic Service (PDS) is the NHS's authoritative repository of demographic data. GP systems must be compliant with the PDS v2 or v3 Compliance Module to ensure correct interaction with PDS. GP systems must also continue to be compliant with the GP-NHAIS Registration Links requirements until such time as PDS become the 'master' of patient registrations.

The processes involved with patient registrations and de-registrations/deductions must continue to behave in the same way as they did prior to the introduction of GP2GP functionality with the exception of the need to update PDS during patient registration to set the patient's Primary Healthcare Provider to the practice code.

The only link between patient registration and GP2GP is that the GP2GP record transfer process is triggered by a successful update of a patient's primary healthcare provider on PDS following registration[4] with a new provider (GP practice).

[4] The Primary Healthcare Provider on PDS records the provider of General Medical Services, Primary Medical Services, PCT Medical Services or Alternative Provider of Medical Services. It is not used to record providers of temporary medical services, child health services, contraceptive services, maternity services or private medical services.

Req ID	Requirement Text	Req Trace	Bundle
S160	The system ***shall*** interact with PDS as defined in the PDS v2 or v3 Compliance Modules. See also S13 which includes some specific requirements associated with patient registration and Supplementary Specification: Compliance Requirements for Patient Registration.	BR08	All
S161	The system ***shall*** continue to interact with NHAIS as defined in the GP-NHAIS Registration Links specification.	BR08	All
S162	The GP2GP process ***shall*** be triggered automatically following a successful update to a new Primary Healthcare Provider on PDS performed as part of the Patient Registration process. There shall be no manual intervention required to trigger the GP2GP process.	BR01, BR09	All

6.3.2 Spine Directory Services (SDS)

Each Spine compliant service or system has a profile stored within the SDS containing information that TMS and other Spine connected services or systems need to interact with that service or system. This includes details about the service itself (e.g. PartyKey, ASID), interactions (messages) supported and configuration properties to observe when sending messages to that service/system.

When sending messages to such a service/system, (e.g. an EHR Request message) the SDS must be first queried to determine whether the Recipient service/system can receive the message, what data values must be used and what behaviour must be observed. For more information refer to the appropriate *External Interface Specification* as defined in the GP2GP R2.2 Compliance Module - Baseline Index

Req ID	Requirement Text	Req Trace	Bundle
S170	The System ***shall*** comply with the appropriate requirements contained in the EIS or successor to interact with the Spine Directory Services (SDS) and the requirements contained in the GP2GP Spine Technical Design relating to SDS interaction.	BR08	All

6.3.3 Transaction Messaging Service (TMS)

Systems supporting GP2GP 'core' messaging (i.e. EHR Request, EHR Extract, Application Acknowledgement) as defined within the GP2GP domain in the MIMs 3 and DMS 1, must send these over the Multi-hop Intermediary Reliability (also known as 'Forward Reliable') channel of the TMS.

Systems supporting the Authority's 'Large Messaging Protocol', which uses the Common Point to Point Message as defined within the Common Point to Point domain in MIM 7, must send these over the Multi-hop Intermediary Reliability channel of TMS.

Management information must be transferred over DTS between the Sending system, the Authority and supplier. DTS supports multiple endpoints and this allows suppliers to be direct recipients of Management Information collected by their own systems.

Req ID	Requirement Text	Req Trace	Bundle
S180	All GP2GP EHR Requests, EHR Extracts, Common Point to Point and associated Application Acknowledgement messages ***shall*** use the Multi-hop Intermediary Reliability (aka 'Forward Reliable') channel of TMS.	BR08	All
S181	The size of any message ***shall*** not prevent a GP2GP record transfer. The Large Messaging Protocol [Ref: 13] ***shall*** be implemented to prevent failure of transfers exceeding Spine constraints on message size, number of attachments and MIME types for attachments. This requires systems to use the Common Point to Point Message for transport of subsidiary parts of the EHR Extract.	BR01	LM
S182	Management information ***shall*** be transferred from the system to at least one MI recipient (to be defined by The Authority) over DTS.	BR08	MI

6.3.4 SPINE Safe Exchange Framework (SEF)

Spine Safe Exchange Framework (SEF) is a mechanism by which The Authority can block or filter out messages from certain service / supplier / product / version in order to maintain the safety of the messaging. SEF is also key to safe and successful deployment of new instances of GP2GP compliant systems or versions during first-of-type (FoT). SEF relies on the ASID being associated with the practice and identifying supplier / product / version combination. Therefore in the hosted service world, an ASID per practice will still have to be acknowledged, even though the supplier / product / version combination will be identical for all ASIDs.

Spine SEF is implemented at a message level within the Spine so that systems only need to understand any responses returned by SEF and ensure that the errors are presented to the user in an understandable and reportable way. SEF responses are documented in the *GP2GP Response Codes* document [Ref: 18].

Spine SEF replaces Local SEF, the specification for which have been deprecated and functionality must be removed from GP2GP functionality.

Note that Spine SEF will not block Common Point to Point Messages.

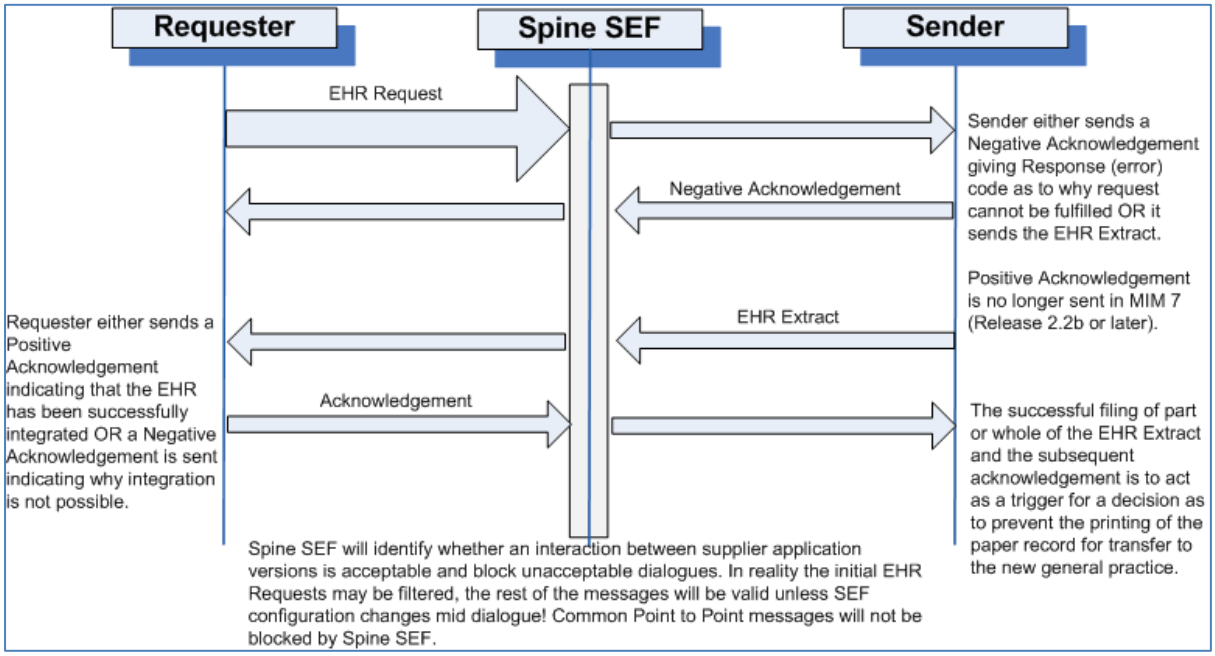

Figure 4 – The GP2GP non-Large Message pattern and Spine SEF

Req ID	Requirement Text	Req Trace	Bundle
S190	The supplier ***shall*** ensure that each practice or primary care organisation (for the purposes of patient registration) has its own ASID for GP2GP even though they may share a Party Key. Practices or organisations may have additional ASIDs for other services.		All
S191	A GP2GP ASID ***shall*** only refer to a single GP Practice / Supplier / Product / Version combination and therefore suppliers ***shall*** configure their systems in such a way that this architecture can be supported.		All
S192	The supplier ***shall*** remove any support for Local SEF implementations within the system as Local SEF requirements have been deprecated.		All

6.4 EHR Extract Enhancements

6.4.1 Data Archetypes

Data Archetype is the collective term to describe the transfer of structured information such as Blood Pressure, Allergies and Clinical Documents in a common form between systems utilising the GP2GP transfer. These archetypes are the first step to defining a tighter structure to the GP2GP messages which will follow in a future set of requirements. The detailed requirements for archetypes depend on establishing clinical data standards which directly impacts the timescales and implementation in release 2.2c. These detailed requirements are documented by GPSoC

Requirements and the GP System must implement them internally before they can be used within a GP2GP transfer. The following are the high level requirements:

Req ID	Requirement Text	Req Trace	Bundle
S200	Archetype constructs ***shall*** be fully supported in terms of data display, collection, and transfer in an EHR Extract. The system shall support all the requirements in the 'GP2GP Supplementary Specification: Archetypes' [Ref: 12].	BR10	AR
S201	The Sending system ***shall*** include all of the patient's blood pressure readings in the EHR Extract in the format defined by the current data standard for GP systems.	BR18	AR
S202	The Requesting system ***shall*** identify process and integrate the patient's blood pressure readings in the EHR Extract into the GP practice system with the same data structure defined by the current data standard for GP systems.	BR18	AR
S203	The Sending system ***shall*** include all of the patient's drug allergies in the EHR Extract in the format defined by the current data standard for GP systems.	BR18	AR
S204	The Requesting system ***shall*** identify process and integrate the patient's drug allergies in the EHR Extract into the GP practice system with the same data structure defined by the current data standard for GP systems and this will include automatically setting up appropriate prescribing decision support.	BR18	AR
S205	The Sending system ***shall*** include metadata for documents in the patient's record in the EHR Extract in the format defined by the current data standard for GP systems.	BR18	AR
S206	The Requesting system ***shall*** identify process and integrate the metadata for documents in the patient's record in the EHR Extract into the GP practice system with the same data structure defined by the current data standard for GP systems.	BR18	AR

6.4.2 Code translations between clinical coding schemes

Across the GP domain, systems currently use a mixture of Read v2, CTV3 and SNOMED CT coding schemes natively in their products. The stated long term strategy of the Authority is for systems to migrate to SNOMED CT but in the meantime, in order for GP2GP to operate in a 'mixed economy', it will clearly be necessary to use cross mapping tables to enable systems to translate from one coding scheme to another. On a case by case basis, the Authority will therefore request individual suppliers

to use the relevant cross mapping tables from the set provided on TRUD by the UK Terminology Centre (UKTC). Rules prescribed by the Authority will apply to the use of these cross mapping tables.

The following coding scheme translations have been developed by the UK Terminology Centre (UKTC) to support translations in GP2GP:

- Read2 →CTV3
- CTV3 → Read2
- Read2 → SNOMED CT
- SNOMED CT → Read2
- CTV3 → SNOMED CT
- SNOMED CT → CTV3

(Note: At the time of writing not all of the above tables have been assured but this exercise will be completed by the time code translations for the relevant tables within GP2GP are required.)

Any translation between one coding system and another must use an authorised mapping. If no mapping is available the original code and description text is to be used.

Req ID	Requirement Text	Req Trace	Bundle
S210	The Sending and Receiving systems ***shall*** only use the Authority's authorised clinical code mapping tables (as listed above) and only if instructed to do so by the Authority.	BR06	CT
S211	When instructed by the Authority, the Sending and Receiving systems ***shall*** implement code translations using the prescribed tables according to the rules laid out by the Authority in the Supplementary Specification: Coding Scheme Translation [Ref: 17].	BR06 BR16	CT
S212	If a Sending system is required to implement code translation when creating an EHR Extract it ***shall*** include both the original code and its rubric, the new translated code and its rubric. (see example below)		CT
S213	When a Requesting system integrates an EHR Extract containing translated codes it ***shall*** , assuming its native coding system is the one of the translated codes, store the translated code and its rubric The Requesting system ***may*** store the original code and rubric if required.		CT

Req ID	Requirement Text	Req Trace	Bundle
S214	When instructed to use code translation tables by the Authority, the Sending and Receiving systems ***shall*** implement the latest release of the code translation tables within 30 days of their release. Note: It is expected that code translation tables will be released twice yearly.		CT

Code Translation Example:

```
<!-- To indicate a code (Read 4 byte) translation to another coding scheme (SNOMED CT). Note the original code is the outer element and the required translation is the inner element. -->

<code code=".H43." codeSystem="2.16.840.1.113883.6.28" displayName="asthma">
  <translation code="195967001" codeSystem="2.16.840.1.113883.2.1.3.2.4.15"
displayName="asthma"/>
</code>
```

6.4.3 Summary Care Record Consent and GP Summary include/exclude Flag preservation

With the increased adoption of the Summary Care Record (SCR) many patients will have invested time with their clinician defining exactly what parts of their detailed care record should be included on their SCR. This information, along with the consent value, is to be preserved in the GP2GP record transfer so that the receiving system does not have to reconfigure them from scratch.

The patient's SCR consent ("preference") value will have also been recorded when they expressed what to include in their Summary Care Record GP Summary or explicitly requested not to have a Summary Care Record. This value will be translated into a coded entry in the EHR, if not already stored as such, and transferred with the EHR Extract.

Attributes of the detailed care record can have three distinct SCR values:

1. Patient has explicitly asked for this information to be included in SCR upload
2. Patient has explicitly asked for this information to be excluded from SCR upload
3. Patient has made no explicit choice about this item but by default, it should not be included in the SCR upload unless it is a data item included in the default set of items for inclusion in the SCR, i.e. an allergy or a medication.

These attributes are to be communicated to the patient's new practice within the EHR. Details as to how this is to be achieved are contained in the *Supplementary Specification: Handling the SCR indicator* [Ref: 14].

Req ID	Requirement Text	Req Trace	Bundle
S220	The Sending system ***shall*** transfer all SCR include flags in a discrete Link Set. This further elaborated in the 'Supplementary Specification: Handling the SCR Indicator' document [Ref: 14].	BR13 BR10	SC
S221	The Sending system ***shall*** transfer all SCR exclude flags in a discrete Link Set. This further elaborated in the 'Supplementary Specification: Handling the SCR Indicator' document [Ref: 14].	BR13	SC
S223	When the Requesting system displays the preview of the received EHR Extract for integration or rejection, the preview ***shall*** indicate to the user the Summary Care Record preference and any include or exclude flags included in the EHR Extract.	BR13	SC
S224	On integration, the Requesting system ***shall*** reinstate the SCR flags on the imported record only using the two Link Sets, SCR Include and SCR Exclude. (Note: For the avoidance of doubt, SCR include/exclude flags only apply to individual data items and do not apply to all data items with the same clinical code).	BR13 BR10	SC
S225	On integration, the Requesting system ***shall*** set the SCR flag to null on items that are in neither SCR Link Set.	BR13	SC
S226	The systems ***shall*** implement all other requirements documented in the 'Supplementary Specification: Handling the SCR Indicator' document [Ref: 14].		SC
S227	The Sending system shall, before the Extract is created, check that a clinical code exists for the patient's current SCR preference. If not present and the preference value is not the default value (i.e. a patient preference has been recorded), the Sending system shall create the appropriate coded entry in the patient record with the date set to the date and time the patient's preference was recorded. Any Summary Care Record patient preference value as defined by GP Summary requirements [NPFIT-FNT-TO-DPM-0928] recorded shall be transferred.		All
S228	The Requesting system shall, at integration of the Extract, reinstate the patient's current SCR preference from the coded entries in the EHR Extract into the patient's record. In the very unlikely event that the patient has already recorded a SCR		All

Req ID	Requirement Text	Req Trace	Bundle
	preference in the Requesting system before EHR Extract integration, the preference with the most recent date and time shall be maintained.		

6.4.4 Patient Facing Services

With the increase in Patient Facing Systems for appointment booking, repeat prescription requesting and record access, the patient's settings need to be transferred between GP systems.

Req ID	Requirement Text	Req Trace	Bundle
S229	The Requesting and Sending systems ***shall*** transfer and reinstate all Patient Facing Service settings in a discrete Link Set. This further elaborated in the 'Supplementary Specification: Handling the Patient Facing Services' document [Ref: 23].	BR13 BR10	PS

6.5 GP2GP Messaging

6.5.1 Message selection

Messages received and sent by General Practice systems are defined by the appropriate 'GP2GP' message domain in the Message Implementation Manual (see below). These are HL7 Version 3 compliant and will be validated using schemas.

The only messages that may be utilised for GP2GP Release 2.2 are those associated with the GP2GP domains published in:

- Message Implementation Manual versions 3.1.10 [see GP2GP Compliance Baseline Index.]

AND, if Archetypes, Summary Care Record or Patient Facing Service settings processing are supported:

- HSCIC Domain Message Specification 1.0 [see GP2GP Compliance Baseline Index.]

AND, if Large Messaging processing is supported:

- The Common Point to Point domain in Message Implementation Manual versions 7.2.02 [see GP2GP Compliance Baseline Index.]

Note: The GP2GP MIM 7.2.02 domain version is '2.2' – this is entirely coincidental with GP2GP 'Release 2.2' – there is no relationship between the specification and MIM domain versions.

Systems complying with the GP2GP 2.2 Compliance Module requirements must be able to interact seamlessly with systems complying with the GP2GP 1.1a Compliance Module requirements.

GP2GP transfer of an EHR involves the dialogue shown in Figure 5 below. No other dialogue variants are permitted except when using the large messaging protocol (see later section).

Management information is recorded for transmission, receipt and acknowledgement of the EHR Request, the EHR Extract and Large Messages (see specification documents describing the requirements for Management Information [Ref: 3, 15, and 16]).

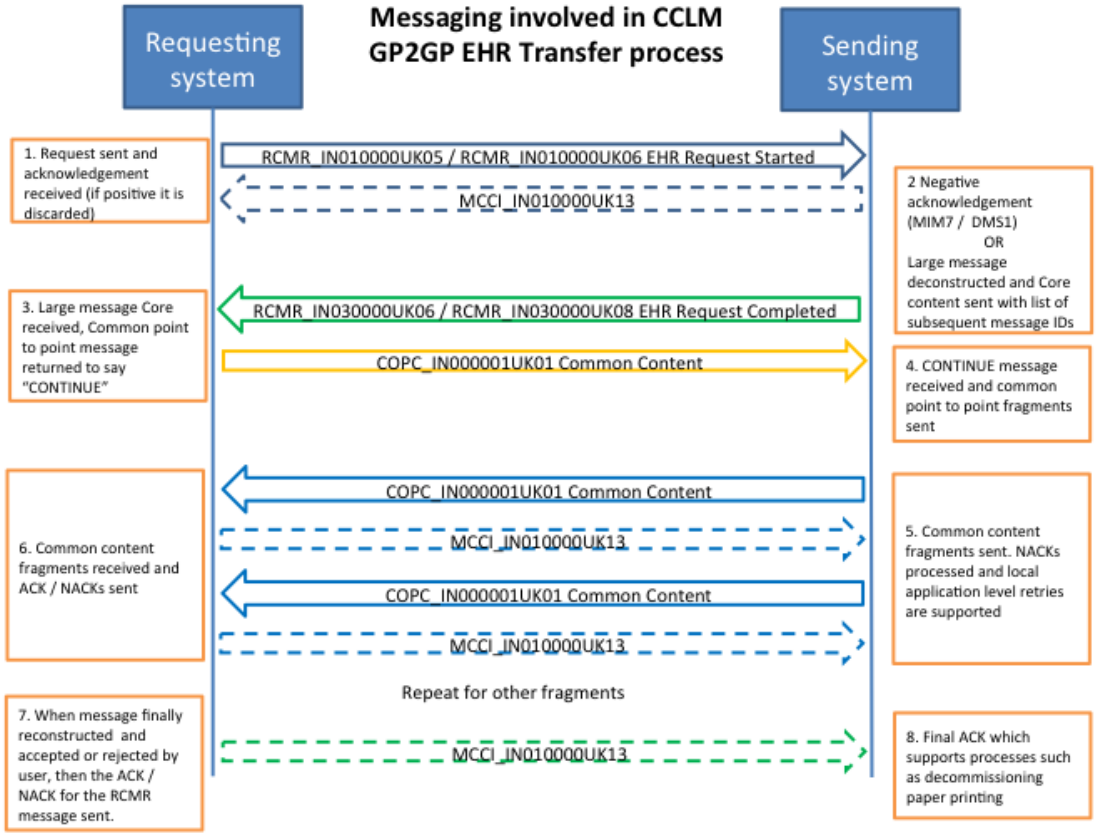

Figure 5 - Overview of GP2GP Message Interaction in Release 2.2 with Large Messaging

Req ID	Requirement Text	Req Trace	Bundle
S230	A Release 2.2c onwards system ***shall*** be capable of interacting with other Release 2.2c onwards systems and Release 2.2b or earlier systems. This requires implementation of multiple versions of the MIM as defined within the Release requirements documentation. This means that: • Release 2.2c and onwards EHR messages ***shall*** utilise the DMS 1 GP2GP domain interactions. • Release 1.1a and 2.2a and 2.2b EHR messages ***shall*** utilise the MIM 3 GP2GP domain interactions. • A Release 2.2c onwards compliant Requesting system ***shall*** be able to identify the Release version of the Sending system by interrogating SDS to discover which interactions are supported by the Sending system. It ***shall*** then send a Release 1.1a/2.2a/2.2b (MIM 3) EHR Request message or a Release 2.2c onwards (DMS 1) EHR Request message as appropriate. • If a Release 2.2c onwards compliant Sending system receives an EHR Request from a Release 2.2b (or earlier) compliant system it ***shall*** generate an acknowledgement and an EHR Extract that are Release 2.2b (or earlier) compliant (MIM 3). • If a Release 2.2c onwards compliant Sending system receives an EHR Request from a Release 2.2c onwards compliant system it ***shall*** generate an EHR Extract that is Release 2.2c onwards compliant (DMS 1). • A Release 2.2c onwards compliant Requesting system ***shall*** be able to receive acknowledgements and EHR Extracts from a Release 2.2b or earlier compliant Sending system and process them according to the 1.1a and 2.2a and 2.2b documented requirements. • The highest version of mutually supported MIM domain ***shall*** be used.	BR09	All
S231	Within the GP2GP Transfer process, the Requesting system ***shall*** construct and send a well-formed, standard EHR Request message, across the NHS Messaging Spine from the appropriate MIM/DMS.	BR05 BR10	All

6.5.2 Error Handling

Req ID	Requirement Text	Req Trace	Bundle
S232	The system ***shall*** validate outbound messages against the relevant HL7 schemas. If an EHR Extract message fail validation, the message ***shall*** not be sent and the failure communicated to the Requesting system with appropriate response codes in Application Acknowledgement messages (see GP2GP Response Codes [Ref: 18]). If an EHR Request message failed validation or an Application Acknowledgement fails validation, these failures shall also be recorded. All failures shall also be recorded for audit, monitoring, reporting and analysis purposes and included within Management Information. The failure ***shall*** also be communicated to the user in line with the user experience flows developed through the processes defined in the User Experience specification (see 'GP2GP Supplementary Specification: User Experience') to enable the user to report it to a support desk.	BR05	All
S233	The system shall validate inbound messages against the relevant HL7 schemas. If messages fail validation, the failure shall be recorded for audit, monitoring, reporting and analysis purposes and included in Management Information. The failure ***shall*** also be communicated to the user in line with the user experience flows developed through the processes defined in the User Experience specification (see 'GP2GP Supplementary Specification: User Experience') to enable the user to report it to a support desk.	BR05	All
S234	The system shall log all other errors. Where such errors prevent the GP2GP Transfer process being fulfilled, the failure shall be recorded for audit, monitoring, reporting and analysis purposes and included in Management Information. Such errors ***shall*** also be communicated to the user in line with the user experience flows developed through the processes defined in the User Experience specification (see 'GP2GP Supplementary Specification: User Experience') to enable the user to report it to a support desk.	BR05	All
S235	The system ***shall*** implement Common User Interface (CUI) standards and requirements where appropriate. Consult CUI Data Standards Change Notes (DSCN).		All

The HL7 messaging packs are available to HL7 UK members and can be downloaded from the UK HL7 web site [Ref: 11].

6.5.3 Use of Conversation ID

The use of a conversation ID has major benefits in analysing problems, performing investigations and analysing management information. The Requesting system starts the system to system 'conversation' when it sends an EHR Request message and a new conversation ID (as a GUID) is inserted within the ebXML header. All subsequent messages involved in the GP2GP transfer must reuse this Conversation ID when constructing the ebXML header in all associated response and acknowledgement messages, including any transmitted using the Large Message Protocol.

Req ID	Requirement Text	Req Trace	Bundle
S240	The Requesting system ***shall*** populate the Conversation ID element in the ebXML header with a GUID. All systems subsequently involved in this transfer ***shall*** use the same Conversation ID in their messages related to the initial request, including any negative or positive acknowledgements and any associated messages transmitted using the Large Messaging Protocol.	BR11 BR12	All

6.5.4 Support for Large Messages

The Transaction Messaging Service (TMS) of the Spine currently has a limit of 5MB maximum message size and the number of ebXML attachments limited to the core HL7 payload and 99 further attachments of specified MIME types. If the total message containing the extract (the detailed care record and all other attachments) exceeds either of these limits then historically the message would not have been sent or would have been blocked by Spine. If attachments are unsupported MIME types, then a place-holder (reference) would have been provided. NB Spine constraints on message size, number of attachments and supported MIME types will change.

However, a large messaging solution has now been documented in the 'GP2GP Supplementary Specification - *Handling Large Message's* [Ref: 13]. Fundamentally this decouples the attachments from the main EHR Extract and sends them via the Spine Common Point to Point Message (P2P). If any single attachment, or the EHR Extract itself, is in excess of the supported maximum message size (currently 5MB) then the 'file' can either be split into two or more files or compressed using GNU ZIP. Some intelligence needs to be applied based on the attachment type, e.g. EHR Extracts are XML and compress well but image files are typically already compressed and would therefore need to be split.

If an EHR Extract message is going to exceed the limits, the Sending system needs to check whether the Requesting system supports the Large Message Protocol by querying SDS.

The ebXML manifest of the EHR Extract message will list all associated messages together with a description of the content so that the Requesting system knows how to process each received message, e.g. reconstruct a multi part file or UNZIP it etc. The actual application type of the file will

also be in the manifest list so that the Requesting system can associate it with a suitable application (e.g. MS Word) when received.

File types that have historically not been supported by the Spine, e.g. TIF, can now be transferred if the type is changed to 'Octet' and the encoding format is 'base64'. The file manifest will retain the "correct" file type for renaming the file at the receiving end. Large Messaging can therefore be used to transfer MIME types not supported by the TMS. The Sending system ***must*** consult the Spine Whitelist to determine whether a MIME type is supported.

Spine SEF will not block Common Point to Point Messages. The Sending system should, therefore, never send any Common Point to Point Messages if they have not received the "continue" response to the EHR Extract message. If a block appears in Spine SEF after the EHR Request was received, the EHR Extract will still be blocked.

Req ID	Requirement Text	Req Trace	Bundle
S250	If the extract is in breach of the Spine constraints (currently >5 MB and/or >100 attachments (including HL7) and/or there are unsupported MIME types as attachments) and the Requesting system does not support Large Messaging, the Sending system ***shall*** return a negative acknowledgement with Response code 14 (see [Ref: 18]) and also update the local Management Information with this outcome.	BR01	LM
S251	The systems ***shall*** support the detailed requirements documented in the 'GP2GP Supplementary Specification: *Handling Large Messages*.' [Ref: 13]	BR01	LM

7 Deprecations and amendments to existing requirements

The following table summarises the deprecations and amendments to existing requirements within the 1.1a baseline. Any 1.1a compliant system must remove the requirements that have been deprecated and change the system to comply with the amended requirements as part of the first affected 2.2 baseline release. Any new GP2GP system must not implement any deprecated 1.1a requirements and must implement the amended requirements as part of the first release where they are relevant.

Req ID	Requirement Text	Req Trace	First Bundle in Release
S260	The system ***shall not*** implement any batch processing within any part of the GP2GP Transfer process.	Deprecated	2.2a
S261	The system ***shall not*** implement any facility to turn auto-extraction of the EHR Extract ON or OFF. Where this has previously implemented, this ***shall*** be removed so extraction is always automatic.	Deprecated	2.2a
S262	The system ***shall not*** implement any Local Safe Exchange Framework (SEF) facility. Where this has previously implemented, this ***shall*** be removed and support for Spine Safe Exchange Framework (SEF) ***shall*** be implemented instead.	Deprecated / Replaced	2.2a
S263	The system ***shall not*** implement positive acknowledgements to EHR Requests where the request uses DMS 1.	Deprecated	2.2b
S264	The system ***shall*** return positive acknowledgements to EHR Requests where the request uses MIM 3 only after the EHR Extract has been successfully generated and passed all checks. If the EHR Extract fails any checks the system ***shall*** return a negative acknowledgement.	Amended	2.2a
S265	The system ***shall not*** send multiple folders in EHR Extracts. Where this has been previously implemented, this ***shall*** be removed. The system ***shall*** continue to handle receiving multiple folders from 1.1a compliant systems but ***shall not*** pass these on.	Deprecated / Amended	2.2a
S266	The system ***shall not*** utilise Response codes 01-05 in any negative acknowledgements.	Deprecated	2.2a

Req ID	Requirement Text	Req Trace	First Bundle in Release
S267	Where the supplier believes any documents included in the GP2GP V2.2 Compliance Requirements - Baseline Index include requirements which conflict with any requirements in this document or the supplementary specifications referenced from this document, the supplier shall inform the Authority who will resolve the conflict.	Amended	2.2a
S268	Where the Requesting system identifies a registering permanent patient is currently registered with another General Practice that shares the same single patient database ('Internal Transfer'), a GP2GP EHR Extract Transfer is not applicable and an EHR Request ***shall not*** be sent. However the following requirements are still applicable and the Requesting system ***shall*** meet these: • IG • PDS • NCRS • User Experience • Permanent Patient Registration • GP2GP Transfer Status Recording • Management Information • Non-Functional Requirements	Amended	2.2a
S269.1	Sending systems which do not support appropriate archetypes ***shall*** enclose Observation Statements representing allergies and adverse reactions contained within an enclosing CompoundStatement of classCode CATEGORY.	Amended	2.2a
S269.2	Sending systems which do not support appropriate archetypes ***shall*** code CompoundStatements containing statements representing allergies and adverse reactions with following codes: • SN53. – for non drug allergies • 14L.. – for drug allergies	Amended	2.2a
S269.3	Sending systems which do not support appropriate archetypes ***must*** encode relationships between an allergy and the medication which is the cause of the allergy using either: • the LinkSet mechanism; or • ObservationStatement representing the allergy with a coded value of type CD representing the medication.	Amended	2.2a

Req ID	Requirement Text	Req Trace	First Bundle in Release
S269.4	Receiving systems integrating allergy and adverse reaction information carried as described in S269.1 to S269.3 ***shall*** carry out a check that the coded information contained is interoperable with the receiving system. In the case of drug allergies the receiving system ***shall*** carry out a further check that the drug allergy information is interoperable with the receiving system's prescribing decision support system. Negative result in either check ***must*** result in generation of a degraded allergy or adverse reaction record entry as described in Supp Spec: Structured degrade handling [Ref: 6] which ***must*** be brought to the attention of a clinician.	Amended	2.2a
S269.5	The list of rejections that a user can choose at the point of integration has been significantly reduced to increase the likelihood of an unbroken chain of GP2GP transfers.	Amended	2.2a

8 Management Information

There are two different sets of requirements associated with Management information, each having its own supplementary specification:

- Harvesting Management Information
- Processing Management Information

The functionality detailed in the Harvesting Management Information specification is to be delivered by the supplier's system whereas the functionality detailed in the Processing Management Information Processing is to be delivered by the Authority.

Req ID	Requirement Text	Req Trace	Bundle
S270	The system ***shall*** support the processes and features described in GP2GP Use Case 2: Transfer MI [Ref: 3]	BR01	MI
S271	The system ***shall*** include all features, processing and validation specified in the Supplementary Specifications: Harvesting Management Information [Ref: 15].	BR12	MI

9 Non-Functional Requirements

9.1 Usability

The supplier is responsible for system usability in areas of screen design and human computer interaction is a key product differentiator in the market. However a number of high impact usability issues have been identified in various products in the live estate that affect the overall success of the GP2GP transfers. Therefore the GP2GP programme has decided to make explicit requirements around resolving outstanding live issues, and follow a User Centred Design process with NHS CFH experts undertaking a review of the suppliers proposed changes. It is expected that suppliers will ensure that their product conforms to international accessibility standards, and the Authority advice suppliers to adopt the latest W3C Web Content Accessibility Guidelines (www.w3c.org).

Req ID	Requirement Text	Req Trace	Bundle
S280	The system ***should*** conform to the latest W3C Web Content Accessibility Guidelines for browser based applications and ***should*** follow the good practice engendered in these guidelines for other types of user interface.	BR17	UX
S281	The supplier ***shall*** resolve all outstanding issues related to User Experience and Usability against previous releases of the GP2GP compliant system in the first release of a Release 2.2 system.	BR17	UX
S282	The supplier ***shall*** meet all the requirements specified in the Supplementary Specification: User Experience [Ref: 22].	BR17	UX
S283	The supplier ***shall*** re-engage with the Authority's User Experience team at the scoping stage of each release containing new or existing GP2GP functionality.	BR17	UX
S284	The system ***shall*** display agreed on-screen messages to the user for each Response Code [Ref: 18] where it is appropriate.	BR17	UX
S285	The supplier ***shall*** review the on-screen messages at each release to ensure these are still fit for purpose particularly when new functionality has been introduced.	BR17	UX
S286	Any failure to process a permanent registration for a patient or failure of the GP2GP process ***shall*** be flagged to the user with sufficient information for them to report it to a support desk.	BR05	All

9.2 Reliability

There are no reliability standards imposed by GP2GP as the product's reliability and ability to recover from failure is a key product differentiator in the market and is left to the suppliers to deliver.

However, GP systems should be able to operate, with compliant access controls, when the TMS is not available and must be able to store any GP2GP requests or responses and forward them when TMS becomes available once again.

9.3 Security

The supplier is responsible for ensuring that their product conforms to data protection legislation in force in the countries and organisations in which it may be used.

Systems must conform to Information Governance and RBAC requirements specified earlier in the document.

9.4 Performance

The system is to operate in near-real time. Requesting and fulfilment of the EHR transfer may not be a priority task in an application under abnormal load, but once load returns to normal levels the EHR processing is to resume. Batched processing in quiet times is not to be implemented.

The application is to initiate the process to transfer records at the point of registration. There should be no unnecessary delays in sending the EHR Request message. EHR Requests should not be batched.

Incoming EHR Responses should be handled as they arrive and the need to accept an incoming EHR made clearly visible to authorised users currently using the system and those subsequently accessing the system. Once the user has accepted the incoming EHR, the integration process should commence immediately, no batching of this processing is to be used.

The Sending system is not to provide any impediment to the fulfilment of the EHR Request. No batching or any auto-extraction configurations of this processing are to be used.

Req ID	Requirement Text	Req Trace	Bundle
S287	The Sending system ***must*** send the EHR Extract within 24 hours of receiving the EHR Request and ***should*** send it within 20 minutes.	BR08 BR09 BR12	All
S288	The Sending system ***must*** send any Common Point to Point messages that form part of an EHR Extract that is a Large Message within 24 hours of receiving the EHR Request and ***should*** send it within 4 hours.	BR08 BR09 BR12	All

9.5 Scalability

There are no scalability requirements imposed by the GP2GP project as the product's ability to accommodate projected growth in the local user or patient communities is a key product differentiator in the market.

Scalability of compliance assurance is an important feature of the GP2GP assurance process. The assurance of a single supplier product against all other products in the market place will not continue indefinitely and subsequent versions of the compliance specification will address this issue.

9.6 Technical constraints

The key technical constraint is that the GP system must be able to connect to the Spine and the services it provides. GP2GP transfer requires the use of the Multi-hop Intermediary Reliability (also known as Forward Reliable) channel and common point to point messaging.

There is a general compatibility issue when exchanging documents or attachments between organisations because the receiving organisation needs to be able to view (or edit) each received attachment. The ability of supplier systems to support MIME types is not within the scope of this specification.

10 Testing and assurance

The emphasis of the GP2GP Compliance Specification is to specify clear and unambiguous requirements so that systems can be built correctly, assured and tested efficiently, and interoperate effectively. Every effort has been made to ensure that the specification does not specify how a solution is delivered.

Assurance of a supplier product will be through the Authority's CAP process tailored to meet the specific release requirements and will involve rigorous testing of the product against this compliance specification in the areas of compliance and interoperability.

Because of the variety of systems in the market place, interoperability testing is the core component of this work. The time taken to perform this testing will depend on the number of supplier systems implementing GP2GP interactions.

The diverse nature of the live GP2GP environment means that the Authority's GP2GP testing and assurance team prefer to work collaboratively with the supplier, rather than rely on very rigid formal specifications. Generally there is a phase of initial testing, in parallel with supplier system test, for the Authority to understand the software and how it operates. The Authority's comments from this phase often facilitate a more robust detailed design document and ease the sign off process.

This also allows the Authority to publish a set of test scenarios specific to the supplier's software. It is expected that the supplier will ensure that these scenarios will run successfully before formal testing begins.

Formal test cycles begin when the supplier is confident that they have a successfully system tested build that meets the GP2GP compliance requirements. This build will be configured in the Authority's test labs by the supplier, who will hand over an operational system to the GP2GP testing and assurance team.

Successful completion of compliance and interoperability testing will see the supplier software deployed in a first of type controlled, live environment involving volunteer practices. This testing will be managed by the Authority's deployment team and will involve live trial transfers.

Details of the CAP process appropriate for a release will be made available to the supplier.

Req ID	Requirement Text	Req Trace	Bundle
S290	Systems supporting GP2GP EHR Extract ***shall*** be tested and approved by the Authority before implementation and enablement of this service.	BR05 BR06	All
S291	All compliance testing ***shall*** follow the Authority CAP process tailored to GP2GP Compliance and Interoperability testing.	BR05 BR06	All
S292	The system ***shall*** meet all interoperability requirements specified by the Authority's Interoperability Test team in order to support interoperability with other GP2GP compliant systems.	BR06 BR10	All

Req ID	Requirement Text	Req Trace	Bundle
S293	The supplier shall modify the system at the request of the Authority's Interoperability Test team in order to support interoperability with other systems entering GP2GP compliance.	BR06 BR10	All