ASSOCIATION CONNECTING
ELECTRONICS INDUSTRIES

IPC-2577

Sectional Requirements for the Supply Chain (B2B) Communication of Quality Product Data

Proposal

IPC-2577
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Contents

Sectional Requirements for Supply Chain Communication of Manufacturing Quality Assessment - Product Data eXchange (PDX)

1 Introduction

This standard (IPC 2577) covers the sectional requirements for Product Quality, Quality manufacturing and Quality repair information including Failure Tracking. This standard defines an XML encoding scheme that captures the setting and updating of quality goals, communicating and responding to quality excursions and reporting actual data from manufacturing and repair operations. The IPC-2577 standard defines how manufacturing and repair product quality and information is exchanged between supply chain partners. Information represented in this standard includes such things as; manufacturing site, manufacturing date, part number, serial number, manufacturing quality results and failure tracking data.

The standard is separated into four key elements.

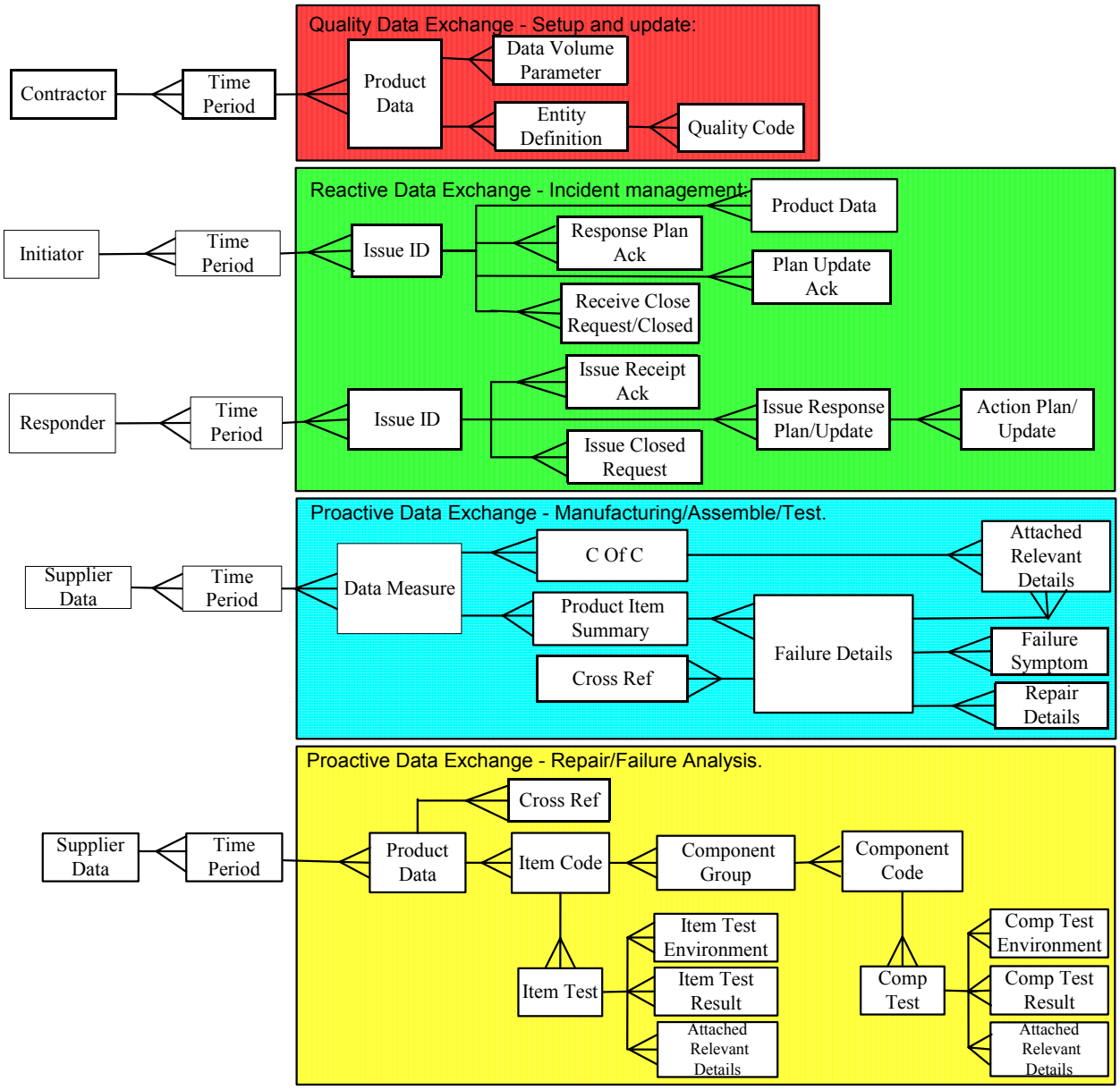
Quality Data Exchange - Setup and update: This is where information is exchanged between supply chain partners to set key parameters for the other three data exchanges. It defines elements related to the data exchange type, the product, the frequency, key data codes and descriptions. i.e. Fail codes, repairs code, corrective action codes. This is defined as a unidirectional exchange.

Reactive Data Exchange – Incident management: This is where information is exchanged between supply chain partners to exchange data on an incident which has been identified at either end of the supply chain. Its purpose is to clearly communicate key information about the incident from one party to the other, responses and action to be communicated in both directions. It exchanges information on product, Issue type, Issue description, response plan, plan update and Issue closure. This is defined as a bi-directional exchange.

Proactive Data Exchange – Manufacturing/Assemble/Test. This is where information is exchanged from a supply chain partner related to manufacturing/assembly/test information. It is a proactive exchange in that information is passed on a defined frequency and is not event drive. The information contains build and fail quantities related to a product and can pass information related to the fails at individual unit level with test and failure details. This is defined as a unidirectional exchange.

Proactive Data Exchange – Repair/Failure Analysis.(FA) This is where information is exchanged from a supply chain partner related to repair and failure analysis information. It is a proactive exchange in that information is passed on a defined frequency and is not event drive. The information contains product related repair/FA details in an individual product format. The structure supports test, failure and environmental data, which can be cross-referenced to other supply chain partners. This is defined as a unidirectional exchange.

Overall Entity Model



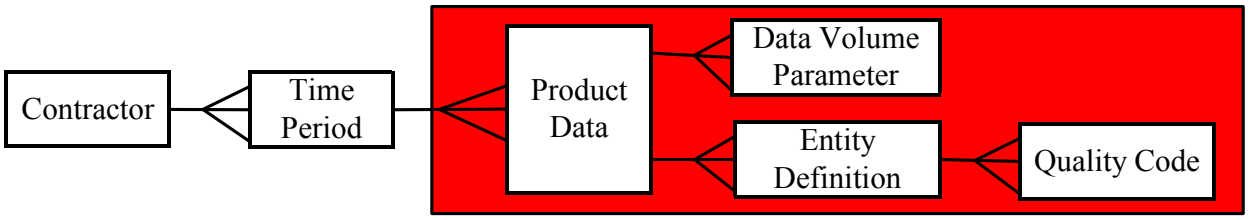
The standard facilitates the exchange of manufacturing & repair information between supply chain partners that supports warranty tracking, product excursion containment, and product quality functions.

Please refer to the IPC-2571 document for introductory and explanatory information about this standard. IPC-2571 also includes other elements that are required or used by this standard. In particular, please note that IPC-2571 dictates the required package structure and xml format for information exchange using any of the subsequent IPC-257x standards such as this one. In any such exchange, a Product Data eXchange package must be defined which contains at a minimum a single pdx.xml file. This file in turn is required to contain a single

ProductDataeXchangePackage element, and may contain any number of other elements from this specification. The Product Data eXchange package may optionally contain or refer to related external files.

Listed below are the Main Elements in the Quality Specification. There are four use cases currently defined that address several Quality exchanges. There must be at least one use case defined. Multiple cases can be included in one file. Each case has its unique role so it would be impractical to see all use cases included in one transmission.

2 Quality Data Exchange – Set-up and Update



Use case: Establish parameters for capturing production volume metrics and communicating the quality codes, values & descriptions. Update the parameters for capturing production volume metrics and quality codes, values & descriptions.

Business Objective: To understand the quality data being transferred between the contracting company and the contractee it is necessary to agree in advance on, the volume measurements will be taken, the level of data to be passed and the content (or values) within the data. The "quality data exchange set-up and update" model allows a contractor to set the data criteria for the contractee. Using this model the contractor can:

- Establish and update the data volume measurements used to support product production;
- Define the values and description of the quality codes being exchanged from the contractee. These quality codes can be used within any entity of the data being exchanged. Examples of these quality codes would be failure/repair codes, test codes, cross-reference values etc… These quality codes support both production processing and repair processing.

Category: Establishing and updating metrics, data values, goals and objectives for transferring quality data.

Requesting Business Process: New product introduction, new vendor being contracted, new product being repaired.

Responding Business Function: Quality data exchange set-up and update.

Actors/Roles:

Actor	Actor Definition	Role Name	Role Type	Role Definition
Contractor	Organization contracting out production or repair	Customer	Requestor	
Contractee	Organization providing production or repair services and the resulting quality data	Supplier of quality data	Supplier	

Preconditions: Contract and trading partner agreements have been established for the given product. Updates may take place on any pre-existing measurements and codes already set up

Begins when: The Contractor sending the data to the Contractee defines the beginning. The Contractor can send revisions of the data at any time (or as agreed upon in the contract).

Recipe: For each product the Contractor will send measurements and/or quality codes to the contractee. The Contractor can send updates to the measurement and/or quality codes to the contractee.

Ends when: Contractee acknowledges the receipt of the data.

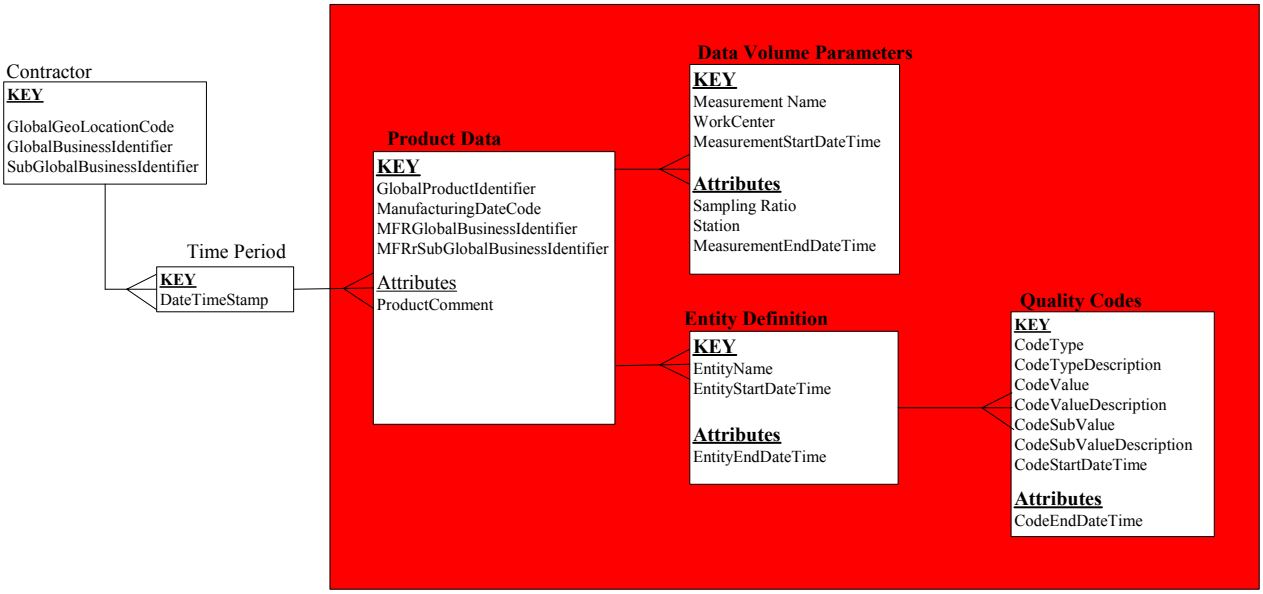
Exceptions: none.

Post conditions: Measurements and Quality Codes have been created and updated by the contractee.

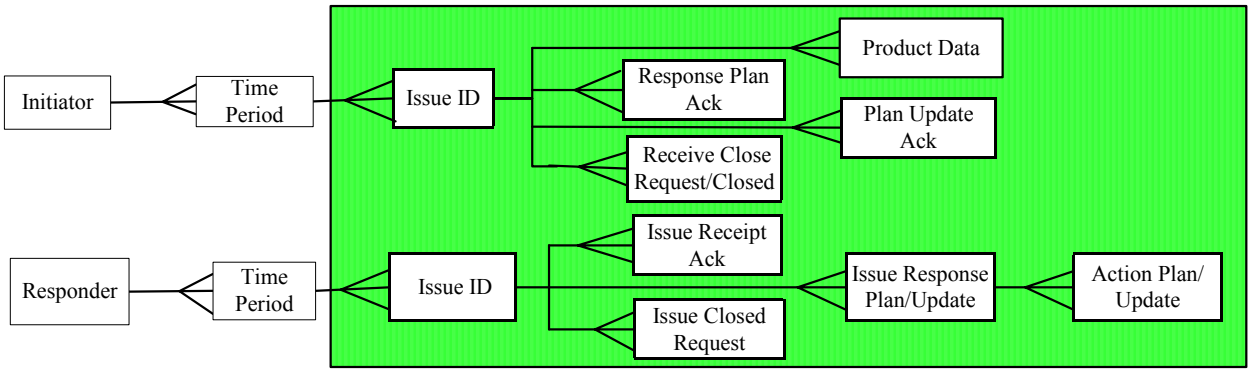
Supporting References: IPC-2571.

2.1 Detailed ERD – Data Setup

The following diagram shows the entity relationship and detailed field names that support the : Quality Data Exchange – Setup and Update exchange model. This diagram shows the entity keys at each level. Logically this is how the data would be stored in a database.

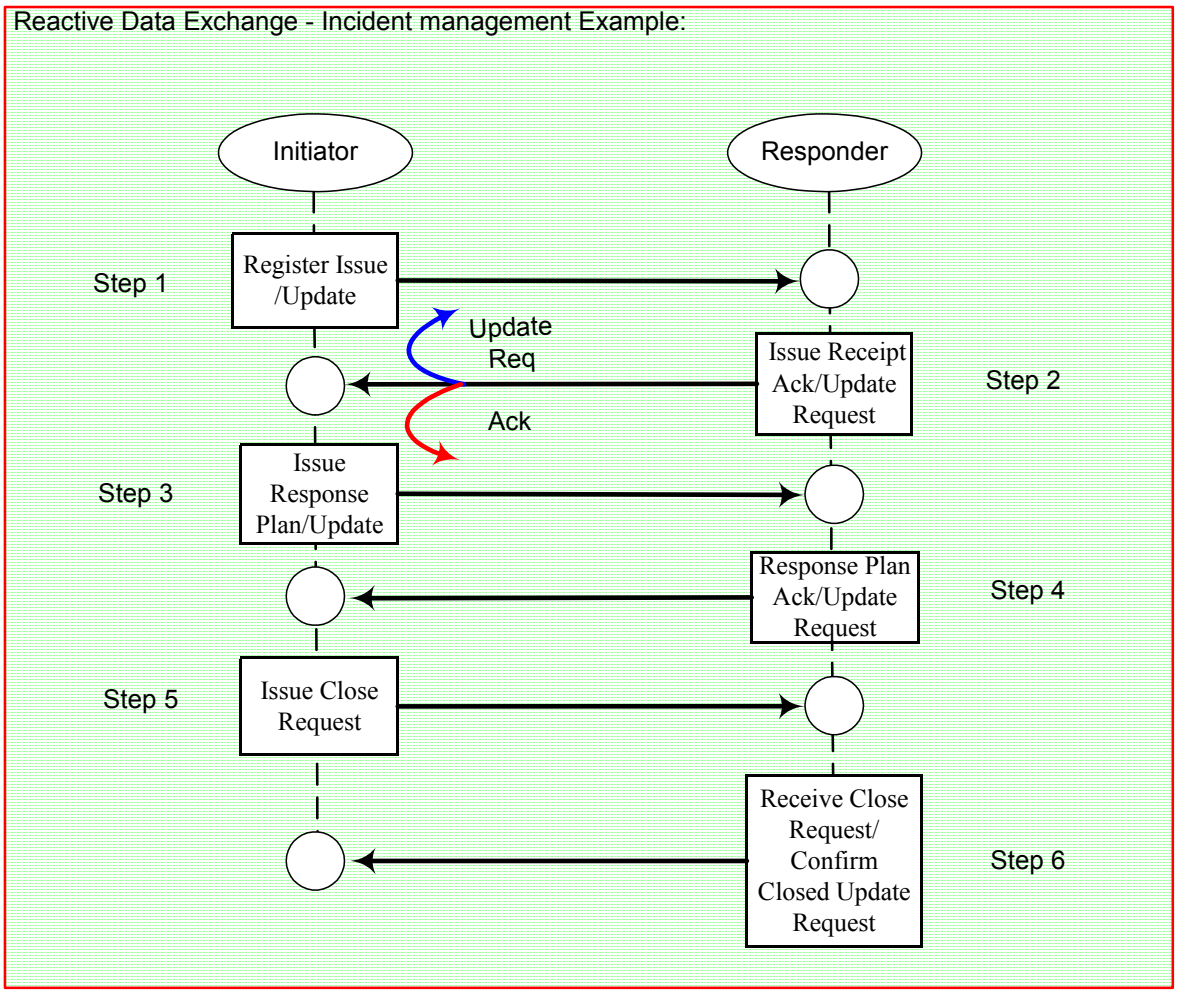


3 Quality Data Exchange - Quality Exceptions/Incidents



Use Case: Respond to Quality Exceptions – Alerts & Alarms

Business Objective: To provide bilateral data exchange to communicate and provide feedback resolution for quality issues. This data exchange can be intiated by either the Contractor or the Contractee and both can play either of the actor roles depending on who is responsible for the corrective action. This response may involve the following steps:



Step 1. Initiator (Issue Originator) identifies a quality incident that requires resolution by an IPC 2577 partner. Sends “Register Issue” to Responder

Step 2. Responder evaluates issue details and can either reply with an update request for additional information/clarification or with an acknowledge of issue received. If update request made Step 1 will be repeated until Responder acknowledges receipt.

Step 3. The Issue Reponse Plan may be generated by either the Initiator or Responder dependant on Initiators original issue request. The plan contains details of each element of a corrective action plan from containment to final root cause corrective action.

Step 4. Responder evaluates plan details and can either reply with an update request for additional information/clarification or with an acknowledge of issue plan received. Step 3 will be continued to update the plan until all items on the plan are complete or until an issue close request is made in step 5.

Step 5. The Issue Close request is made once the issue response plan has been completed and the issue is ready for closure.

Step 6. If the plan has been completed sucessfully the Close Request can be confirmed and the issue closed with the plan owner. If the closure requirements have not been fully met further update may be requested until the issue is deemed closed by both parties.

Category: Responding to quality issues

Requesting Business Process: Could be triggered from almost any business process, and could be initiated by the OEM, EMS, supplier, or end customer.

Responding Business Function: various.

Actors/Roles:

Actor	Actor Definition
Issue Originator	Organization that identified the quality issue being addressed. Could be end customer, could be member of the supply chain, could be a machine, etc.
Issue Responder	Organization that is notified of issue and communicates issue to one or more Issue Subscribers throughout virtual organization. Issue responder tracks the issue, determines when its resolved, communicates final resolution to customer if needed, communicates the issue to one or more Issue Subscribers for eventual resolution, and reports status back to Issue Originator. May identify systemic root cause and systemic corrective action of issue.
Issue Subscriber	Organization that is notified of the issue by the Issue Responder and identifies one or more potential Issue Owners. May identify systemic root cause and systemic corrective action of issue.
Issue Owner	Organization that identifies the resolution to the issue, and assigns actions to Action Owners. There may be more than one Issue Owner per issue. Issue Owner tracks actions that they assign to Action Owner. Validates that all assigned actions are closed. May identify systemic root cause and systemic corrective action of issue.
Action Owner	Organization responsible for taking steps to resolve all or part of the issue. May be more than one Action Owner per issue. Alerts Issue Owner of status. Validates that action is closed.
Customer	Organization that may be effected by issue and/or its resolution. May be Issue Originator.

Preconditions: Valid contract has been established, and a quality-related problem has occurred.

Begins when: A quality issue has been reported related to product, process or service.

Recipe: Issue Originator reports issue to one issue responder. Issue Responder acknowledges receipt of issue, and communicates issue to one or more Issue Subscribers. Issue Subscribers identify and communicate issue to one or more Issue Owners. Issue Owners analyze issue and identify Action Owners. Action Owners identify necessary actions to resolve issue, drives actions to closure, and reports status to Issue Owner. Issue Owners report status to Issue Subscribers and/or Issue Responder. Issue Responder reports status to Issue Originator or Customer if needed. Customer or Issue Originator acknowledges or accepts corrective action. Issue Responder confirms that issue has been adequately addressed.

Ends when: Issue Responder confirms that issue has been adequately addressed.

Exceptions:

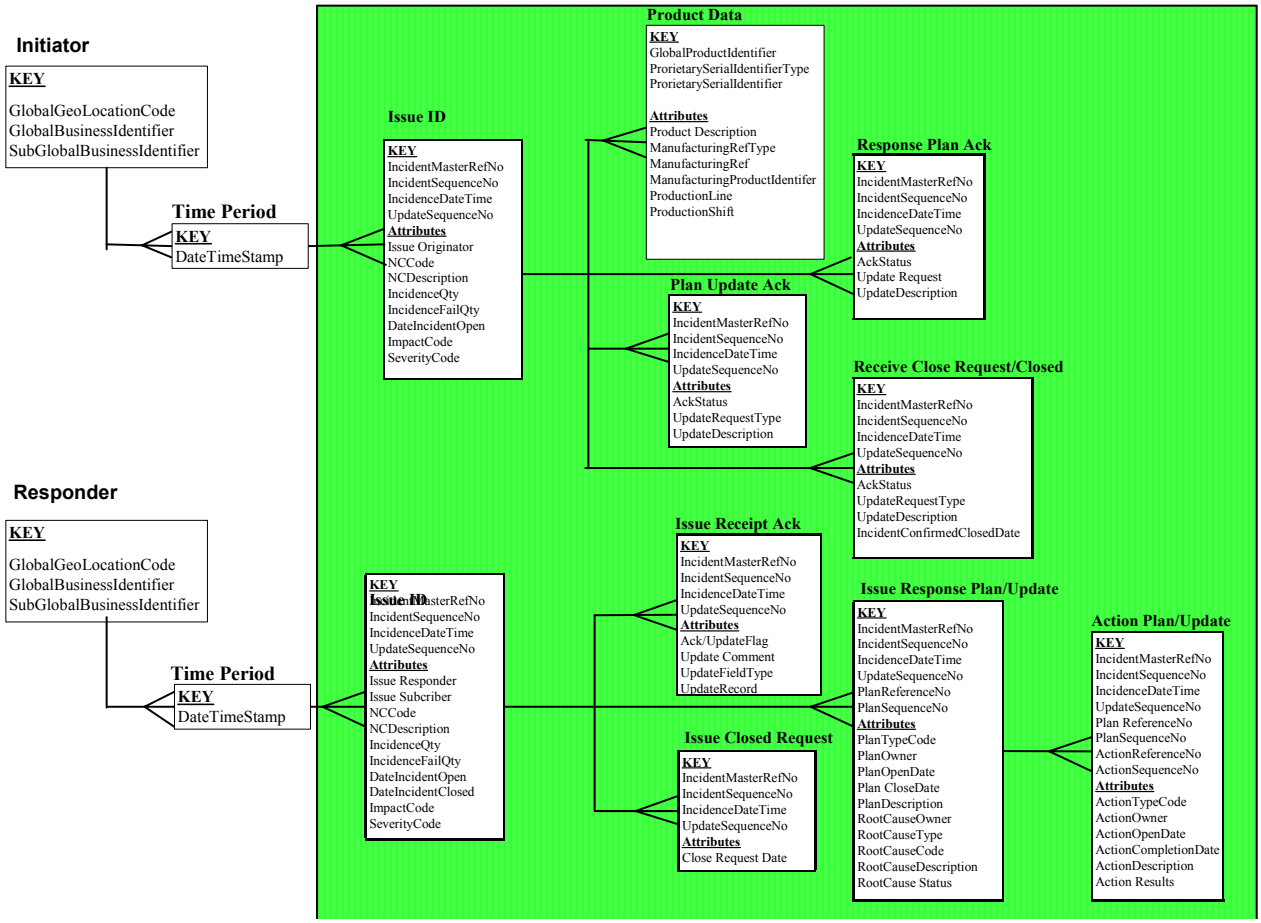
Postconditions: Quality non-conformance or issue has been resolved.

Supporting References: IPC-2541/6/ and IPC-2571 and IPC-2576.

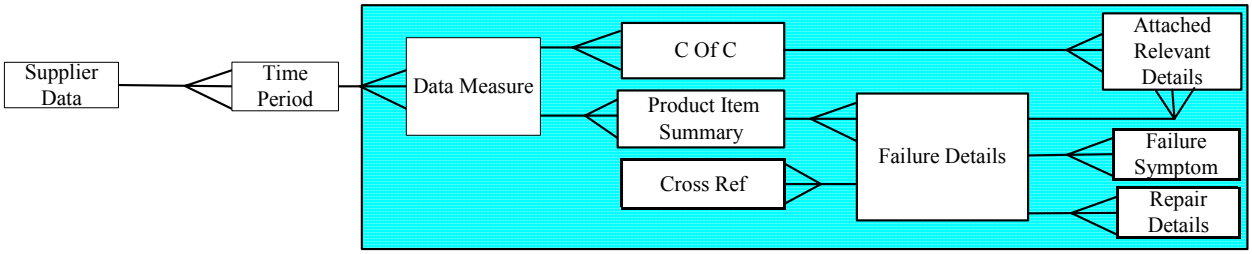
Possible PIPs:

3.1 Detailed ERD - Quality Exceptions/Incidents

The following diagram shows the detailed entity relationship and detailed field names that support the Quality Data Exchange – Setup and Update exchange model. This diagram shows the entity keys at each level. Logically this is how the data would be stored in a database.



4 Quality Data Exchange - Proactive Data– Manufacturing/Assembly/Test



Use Case: At volume quality data exchange

Business Objective: To monitor product health to proactively prevent product excursions and drive corrective actions, and to use the data to drive continuous and next generation improvements. Quality data volume contains a "Key" at the detail record level enabling the linking of data elements between data exchanges. This key can be formed by a combination of product identifer, serial identifer and datetimestamp.

The model is setup to enable the exchange to support various levels of business and product maturity. As an example, data exchange content could vary by production type;

Pre-Production/New Product Introduction –

- Test Type summary
- Failure Details by unique product identifier (serial number, batch code)
- Attach Relevant document – photographs, test result, time to failure charts, parametrix details

Standard Production –

- Test Type summary
- Failure details by unque product identier (serial number, batch code)

Sustain/Mature product/production

- Test Type Summary

C of C (Certificate of Conformance)

- Defined Certificate of Conformance Details
- Test & Evironments details per C of C requirements.

The cross reference key at the failure detail level is available to enable a linkage between a failure record and repair data covered in case 4. As an example

- This would permit the tracking of a failure in a manufacturing line to repair data from another supplier. i.e for example a hard drive reported as the failure cause on a systems integration line could be tracked back to the repair record of the hard drive repair agent.

Category: Delivering quality data.

Requesting Business Process: Build to Volume

Responding Business Function: EMS

Actors/Roles:

Actor	Actor Definition	Role Name	Role Type	Role Definition
OEM	Organization contracting out production	Customer	Requester	
EMS	Organization providing OEM with production services and the resulting quality data	Supplier of production services and quality data	Supplier	

Preconditions: Valid contract, trading partner agreements and technical goals and codes have been established in preparation for BTV, and production/service has begun. This use case does not apply to continuous, real time data reporting, but is intended to cover batch data reporting for defined events (eg: shift, lot, etc.). Empty data packages may be acceptable.

Begins when: After production/service begins, and in response to an OEM request or per the EMS's initiative. Or as defined in "Set Quality Goals"

Recipe: OEM initiates request or EMS decides to publish quality reporting data, EMS transmits quality data at a level of detail and frequency defined in the data setup stage. No formal acknowledgement required beyond machine response.

Ends when: Production/Service is complete, per contract requirements, per request to halt quality reporting, per notification of production/service transfer. Or as defined in "Set Quality Goals"

Exceptions: None

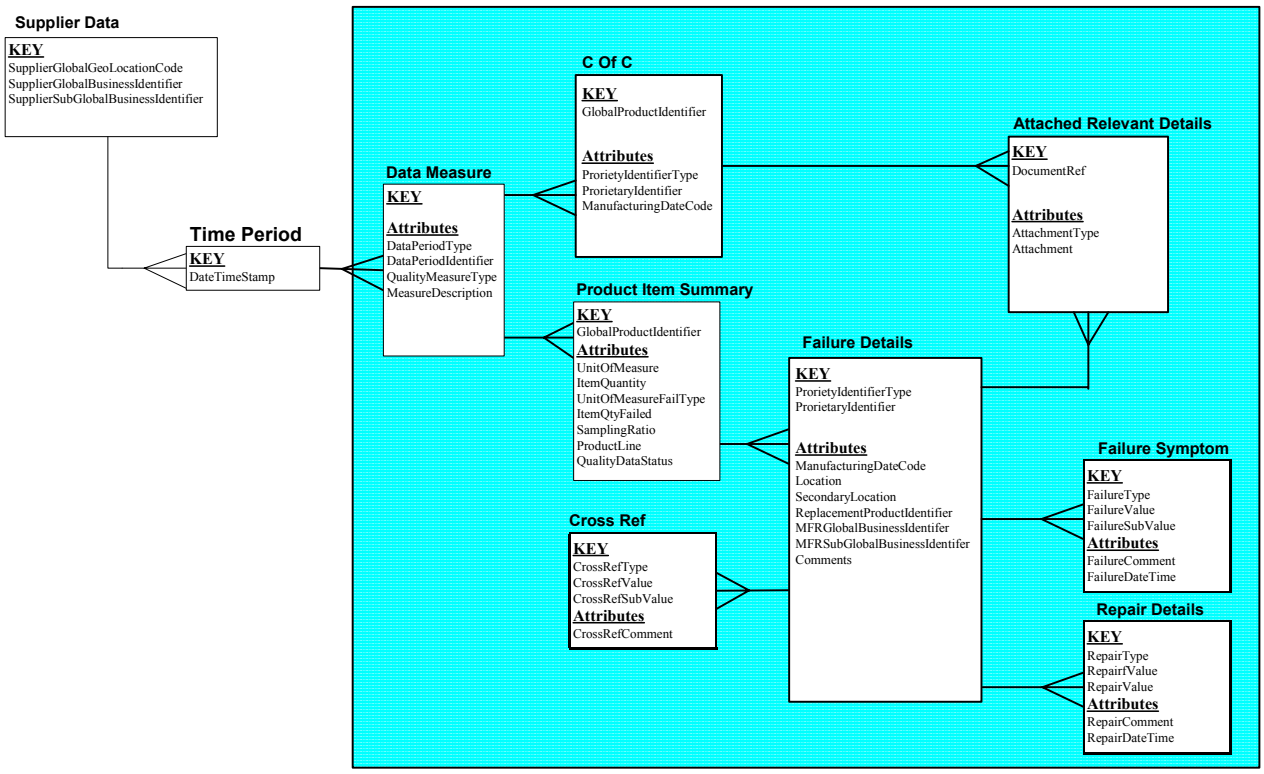
Postconditions: Reportable event (shift, lot, etc.) is complete.

Supporting References: IPC-2571.

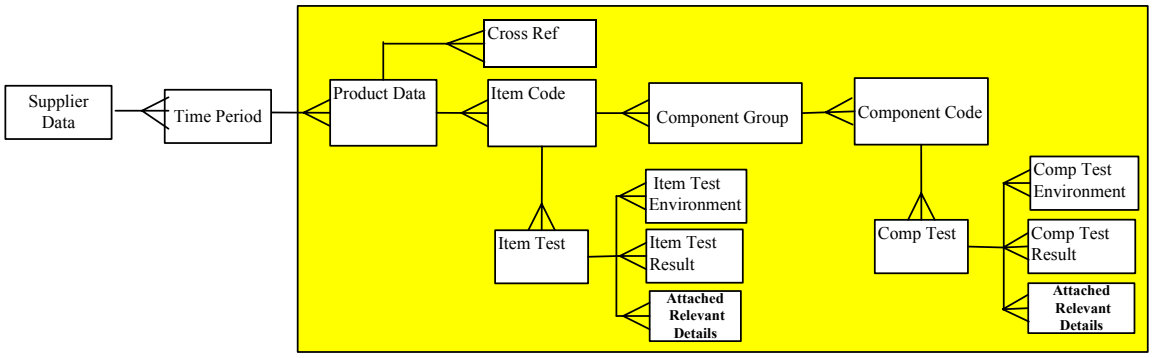
Possible PIPs: Initiate/request quality data reporting, halt quality data reporting (could be due to production transfer, production termination, production completion,…), Report quality data

4.1 Detailed ERD - Proactive Data Exchange – Manufacturing/Assembly/Test

The following diagram shows the entity relationship and detailed field names that support the Proactive Data Exchange – Manufacturing/Assembly/Test model. This diagram shows the entity keys at each level. Logically this is how the data would be stored in a database.



5 Quality Data Exchange - Proactive Quality - Repair Data exchange



Use Case: To capture a final disposition, failure analysis, root cause and component usage data from repair providers. Communicate repair and/or failure information about a product to support the control of the repair process and the lowering of the repair costs.

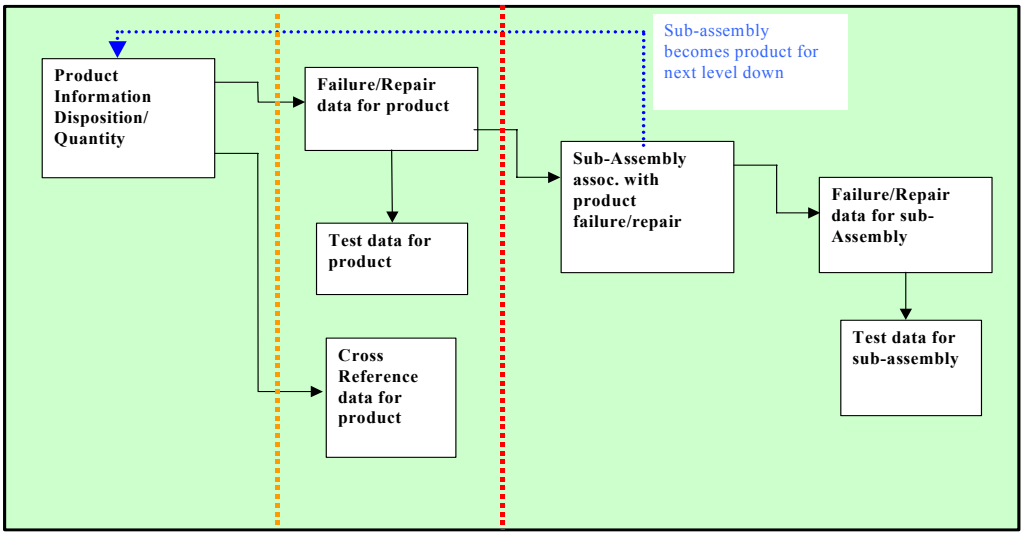
Exceptions – None

Business Objective: To provide a data exchange to communicate failure and repair data from repair providers. In this model the data receiver is expecting a data exchange for each repaired item or group of repaired items. This data will include:

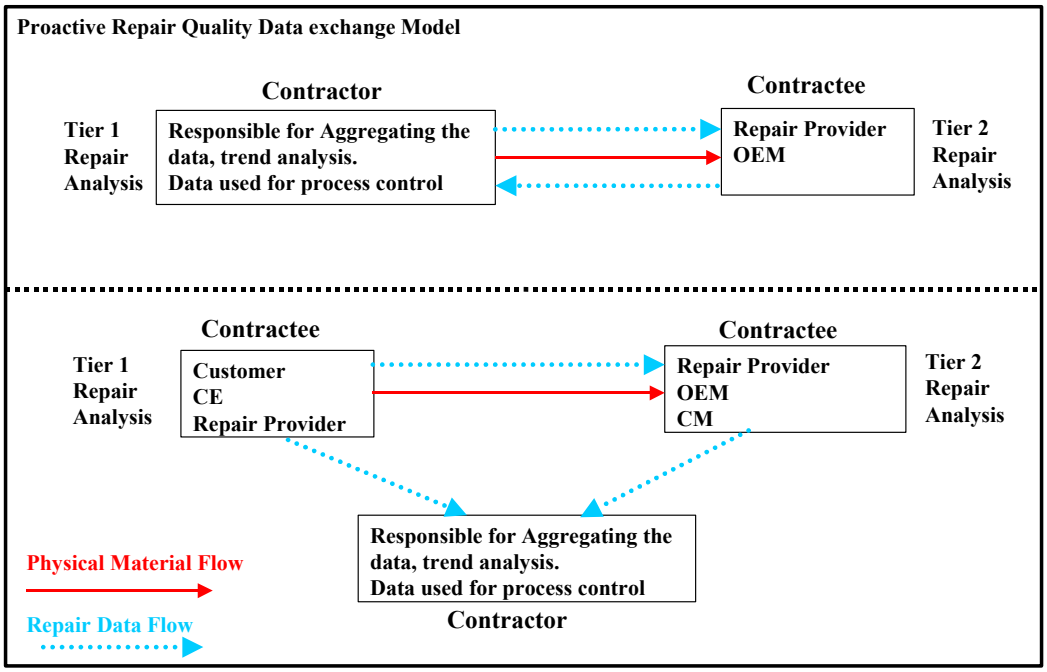
- identification of the product (individual or quantity driven);
- disposition of the product;

- failure and repair codes associated with each incident for the product;
- identification of sub-assemblies (or components) repaired or replaced;
- failure and repair codes associated with the sub assemblies;
- test data associated with the failure or repair of the product and/or sub-assembly;
- Cross-reference data for the product (i.e. RMA Number, PO, Master Event Number etc..).

The following diagrams show how data is captured at the product level and one level down from the product to a sub-assembly or component level. If there is a need to communicate data associated with a sub-assembly of a sub-assembly then the first sub-assembly becomes a product.



In the diagram PRODUCT A has SUB-ASSEMBLY 1 and SUB-ASSEMBLY 2. SUB-ASSEMBLY 2 has its own SUB-ASSEMBLY 3. The repair data associated with PRODUCT A would include any failure or repair data associated with PRODUCT A and SUB-ASSEMBLY 1 and SUB- ASSEMBLY 2, as they pertain to PRODUCT A. As SUB-ASSEMBLY 2 is repaired a new set of data would be created referencing SUB-ASSEMBLY 2 as a “product” and SUB-ASSEMBLY 3 as a sub-assembly (or component) to SUB-ASSEMBLY 2. The two data records would be linked through a cross-reference identifier.



The Proactive Repair Quality Data exchange model supports a flexible ongoing feed of repair and failure data in which the level of data being communicated is negotiated between the company requesting the data (contractor) and the repair provider(s) (contractee) performing the failure analysis and repair.

As shown in the diagram above, the company requesting is responsible for the aggregation of the data, and trend analysis. This allows the company performing the repair to concentrate on the product being repaired and the collection of the failure/repair data for that product. The aggregation of the data and trend analysis is not incorporated into the cost of the repair.

In this model the contractor is expecting 100% feedback of the data on the disposition of the material that repair provider has been sent for repair.

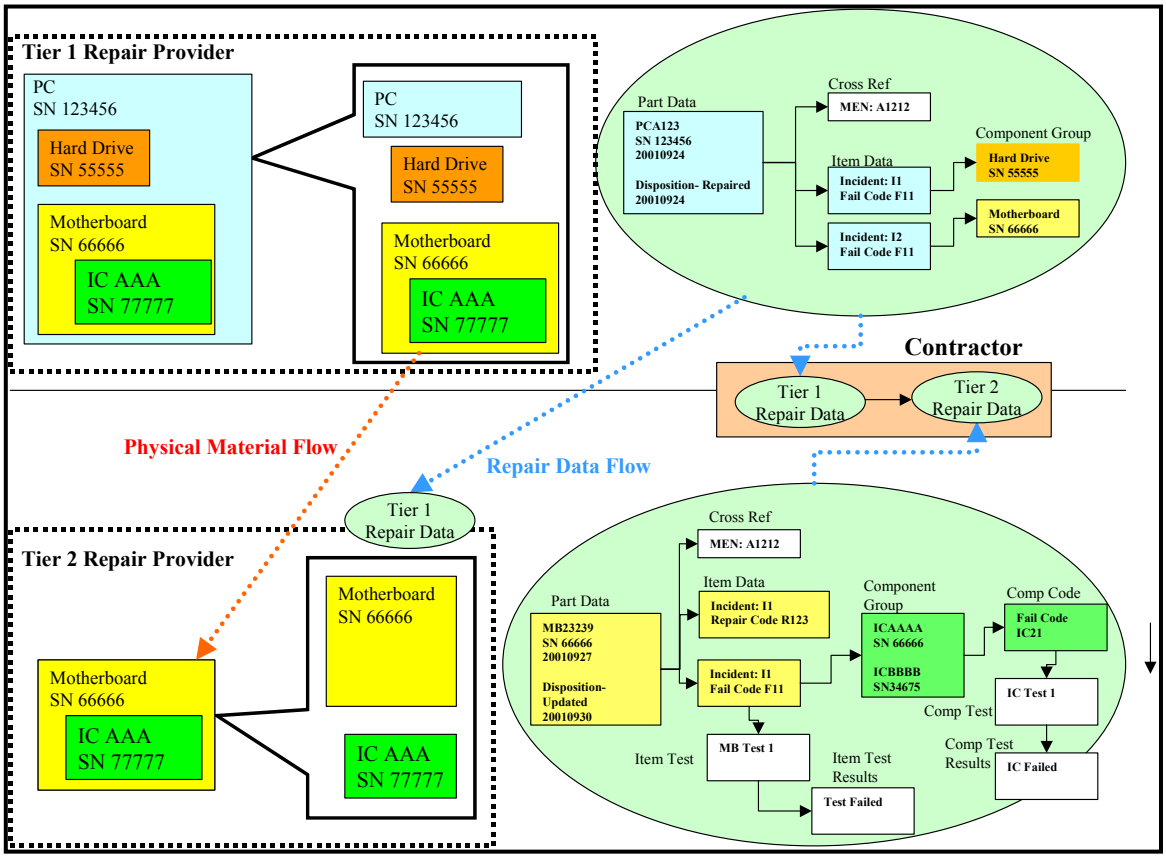
From a manufacturing standpoint this model supports a production line in which finished products are being integrated to create a new product to be sent to an end customer (e.g. Building a server). As testing is performed on the integrated products any failure data (tier 1) associated with the sub-assembly would be sent to a repair provider contracted to repair the sub-assembly (tier 2). Any failure or repair quality data captured by the repair provider (tier 2) would be sent to the contractor were aggregation and trend analysis would take place.

This model is also used for post customer support. If a customer or CE Customer Engineer (tier 1) sends a defective product to a repair provider (tier 2) this model would allow:

- The CE to send failure or repair information found at the customer site to the repair provider. This could lower cost of the repair to the contractor by providing the tier 2 repair provider an understanding of the failure that was found at the customer site.
- Once completing the repair, the tier 2 repair provider could send quality data about the repair to a contractor.
- The contractor could use the data from the two repair providers to support failure/repair trend analysis. They could also use the data to manage the business relationship with their contracted repair providers.

5.1 Proactive Quality Repair Data exchange model – Working Example

The diagram that follows shows a working example of how repair data can be passed using the Proactive Quality Repair Data exchange model.



In this example, a PC is analyzed and repaired by the Tier 1 repair provider. The Tier 1 repair provider replaces the hard drive and motherboard on the PC. The Tier 1 repair provider then sends the motherboard to the Tier 2 repair provider. In addition to sending the physical motherboard, the Tier 1 repair provider also transmits a “standard” set of quality data to the Tier 2 repair provider. The quality data indicates the failures that were found at the product level (PC) and sub-assembly level (motherboard). The Tier 1 repair provider sends the data to the Tier 2 repair provider for three reasons:

1. They are under contract to do so by the contractor.
2. When received by the Tier 2 repair provider it can generate an “expected receipt” of the motherboard.
3. The failure data received will indicate the conditions and failures that the Tier 1 repair provider found. Having this data should benefit the Tier 2 repair provider in diagnosing and repairing the motherboard. Thus reducing the overall cost of the repair to the Contractor.

In this example, the both the Tier 1 and Tier 2 repair providers transmit quality data to the Contractor. Using a cross-reference identifier (in this case a “master exchange number”, MEN), the contractor can link the data from the two repair providers. By having the repair providers communicate with this model, the contractor can use the data for the following:

1. Manage the cost of repair by analyzing the amount material found defective, the amount of testing performed, new material consumed for the repair, time spent doing the repair etc..
2. Monitor the amount of material being repaired by a particular repair provider.
3. Track the amount of material “in transit” between repair providers.
4. Perform both high-level and detailed failure trend analysis for products and sub-assemblies of the product.

Category: Proactive Quality Data Exchange – Repair Data

Requesting Business Process: Repair Data Exchange

Responding Business Function: Repair Agent

Actors/Roles:

Actor	Actor Definition
Contractor	Determines the level of failure data to be captured. Responsible for trend analysis of the failure data Responsible for setting the quality goal which includes identifying all failure, repair and test codes to be communicated
Contractee	The repair provider capturing failure data on the products Responsible for sending quality data as defined in the “set quality goals”.

Preconditions: Valid contract has been established between companies requesting the data (contractor) and the repair provider (contractee) collecting the data. The “set quality” goals case will define a set of failure codes, repair codes and test codes arranged between the contractor and contractee. The frequency that the data is to be sent is arranged by the contractor and contractee.

Begins when: The disposition of material that has failed and/or has been repaired needs to be communicated to another company.

Recipe: N/A

Ends when: As defined within “set quality goals”

Exceptions: None

Post conditions: None

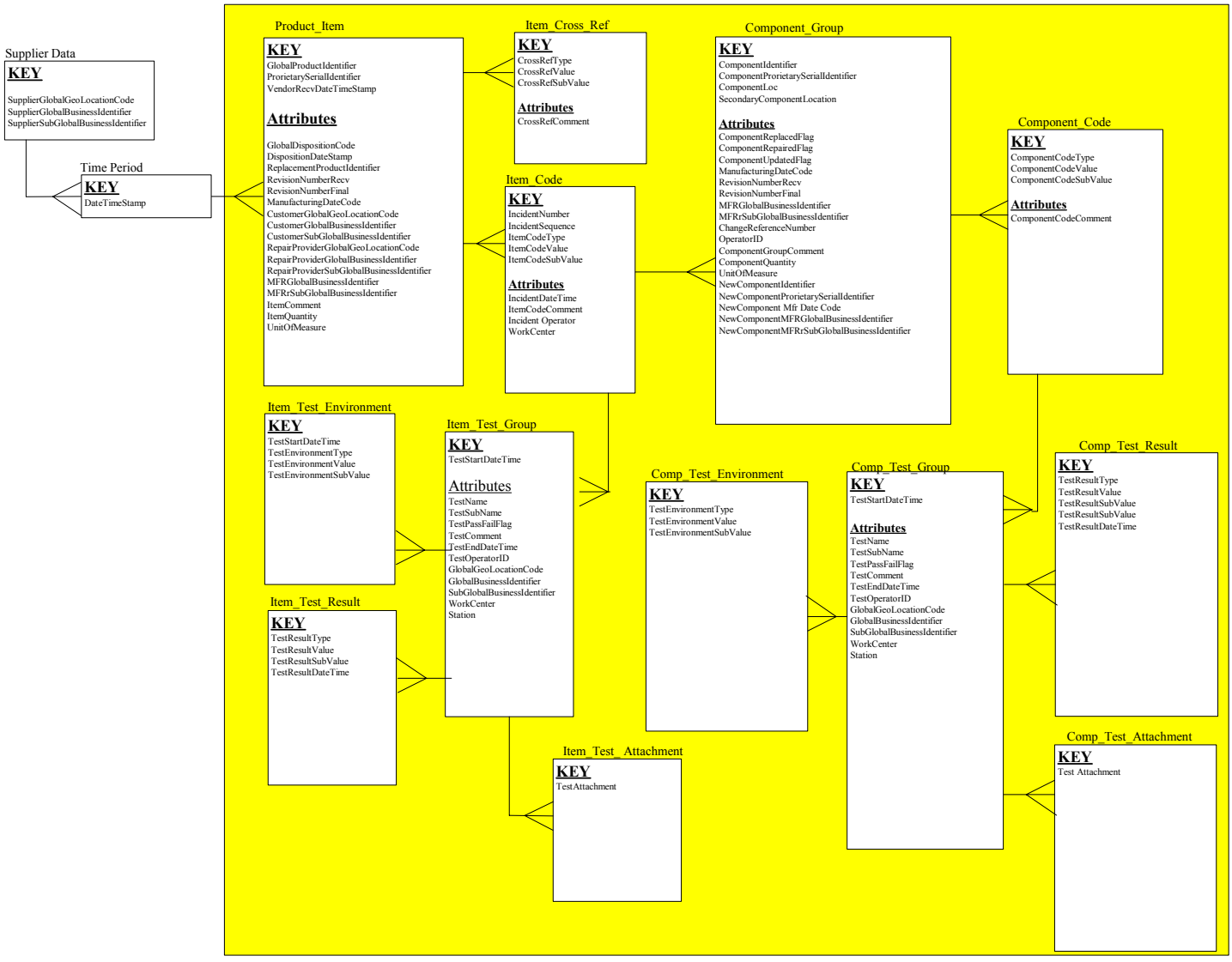
Supporting References: IPC-2541/6/ and IPC-2571 and IPC-2576.

Possible PIPs: Proactive Quality Repair Data exchange

5.2 Detailed ERD - Proactive Quality Repair Data exchange

The following diagram shows the entity relationship and detailed field names that support the Proactive Quality Repair Data exchange model. This diagram shows the entity keys at each level. For the entities in which there is a parent child relationship, the key of the child entity repeats the attributes of the key of the parent entity. Logically, this is how the data would be stored in a database.

This next ERD diagram defines the same information as the one above. The difference in this diagram, is that the child entity keys do not include the attributes of the key of the parent entity.



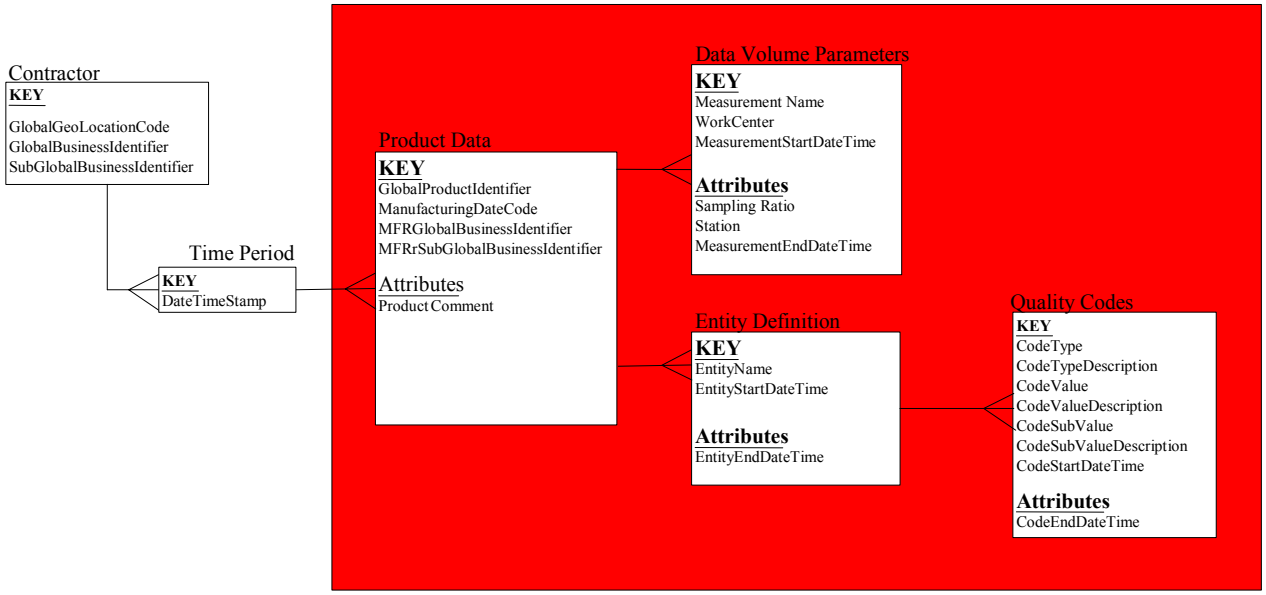
In this diagram it is much easier to understand what is different between one entity and any related entities. The ERD diagram maps nicely to the XML document that is used to define the Proactive Quality Repair Data exchanged.

6 XML Code and Glossary

XML Document Type Definitions (DTDs) of the elements in this standard are contained in IPC2571. A Document Type Definition (DTD) is a model for describing the structure of

information. A DTD describes a model for a whole class of documents. The model describes the possible arrangement of tags and text in a valid XML-document (or message). A DTD might also be viewed as an agreement on a common vocabulary for a particular application domain (like the Electronics Manufacturing) that involves exchanging documents or messages.

6.1 Data Setup – ERD, XML and Glossary



6.1.1 XML Layout (Data Setup)

Key:
Qty 1 = required *if the group under which it falls contains data*
Qty 0..1 = optional.
Qty 1..n = 1 or more item(s) required.

Line Qty	Name
1	**QualityDataParameter**
1	|--Version
1	**|--ContractorData**
0..1	| |--GlobalGeoLocationCode
1	| |--GlobalBusinessIdentifier
0..1	| |--SubGlobalBusinessIdentifier
1..n	| **|--TimePeriod**
1	| | |--DateTimeStamp
0..n	| | |--**ProductData**
1	| | | |--GlobalProductIdentifier
0..1	| | | |--ManufacturingDateCode
0..1	| | | |--MFRGlobalBusinessIdentifier
0..1	| | | |--MFRrSubGlobalBusinessIdentifier
0..1	| | | |--ProductComment
0..n	| | | |--**DataVolumeParameters**
1	| | | | |--Measurement Name
0..1	| | | | |--WorkCenter
1	| | | | |--MeasurementStartDateTime
0..1	| | | | |--SamplingRatio
0..1	| | | | |--Station
0..1	| | | | |--MeasurementEndDateTime
0..n	| | | |--**EntityDefinition**
1	| | | | |--EntityName
1	| | | | |--EntityStartDateTime
0..1	| | | | |--EntityEndDateTime
0..n	| | | | |--**QualityCodes**
1	| | | | | |--CodeType
0..n	| | | | | |--CodeTypeDescription
1	| | | | | |--CodeValue
0..n	| | | | | |--CodeValueDescription
0..n	| | | | | |--CodeSubValue
0..n	| | | | | |--CodeSubValueDescription
1	| | | | | |--CodeStartDateTime
0..n	| | | | | |--CodeEndDateTime

1 |--**FromRole.PartnerRoleDescription**
1 |--GlobalPartnerRoleClassificationCode
1 |--PartnerDescription
1 |--GlobalPartnerClassificationCode
1 |--BusinessDescription
1 |--BusinessIdentifier
1 |--GlobalSupplyChainCode
1..n |--ContactInformation
1 | |--ContactName.FreeFormText
1..n | |--telephoneNumber.CommunicationsNumber
1..n | |--EmailAddress
1 |--**ToRole.PartnerRoleDescription**
1 |--GlobalPartnerRoleClassificationCode
1 |--PartnerDescription
1 |--GlobalPartnerClassificationCode
1 |--BusinessDescription
1 |--BusinessIdentifier
1 |--GlobalSupplyChainCode
1 |--thisDocumentGenerationDateTime.DateTimeStamp
1 |--thisDocumentIdentifier.ProprietaryDocumentIdentifier

6.1.2 XML Glossary (Data Setup)

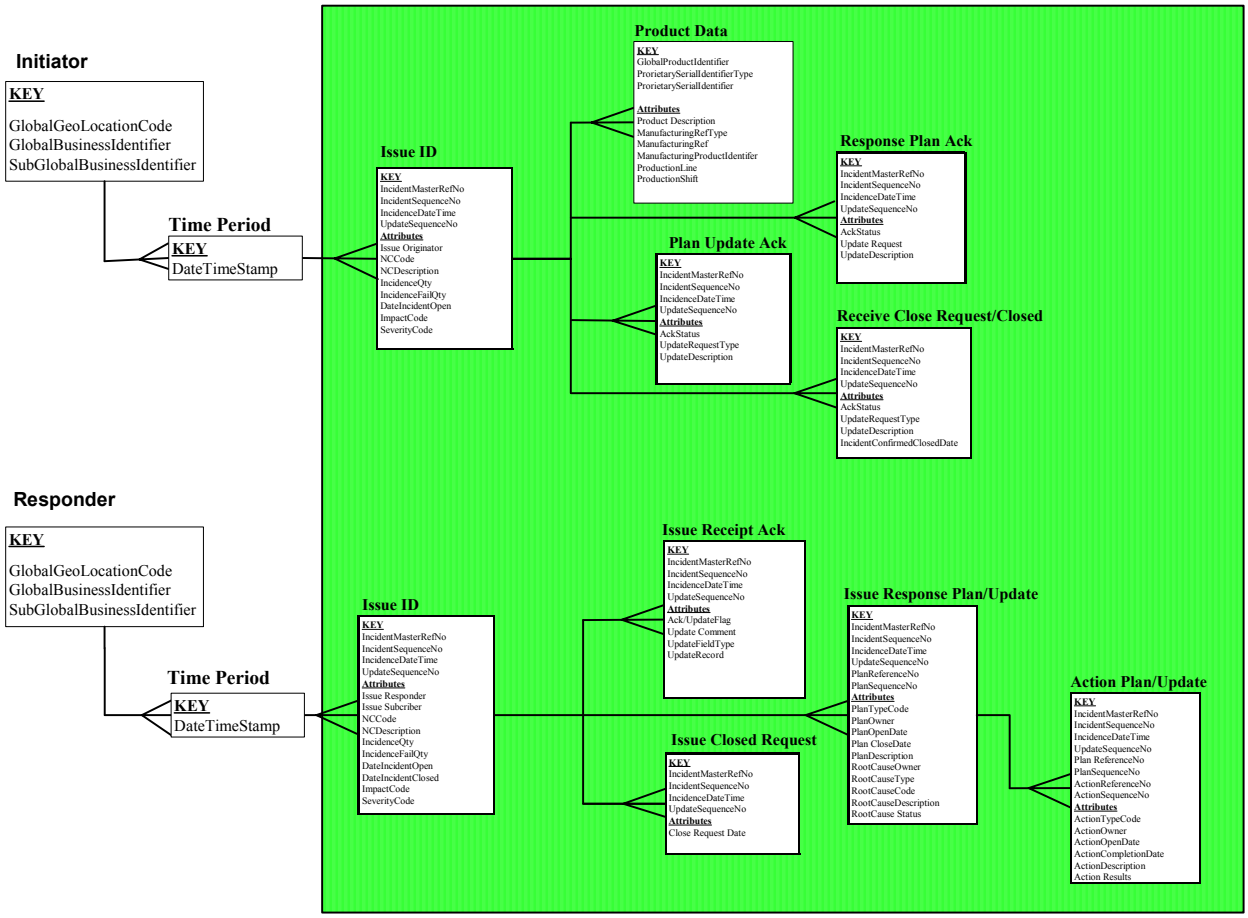
XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
QualityDataParameters The collection of business properties that describes the quality data sent from the Repair Provider to the Supply Chain					
Version	Version of the document. Value: 1.5				
Contractor Data					
GlobalGeoLocationCode	Code identifying a geographic location. (note:Need to find RosettaNet Standard) Example Values: AM = Americas AP = Asia Pacific EU = Europe	String	1	20	char(20)
GlobalBusinessIdentifier	A unique number that identifies the customer by name and location.	String	1	20	char(20)
rSubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of a customer by name and location.	String	1	20	char(20)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
TimePeriod					
DateTimeStamp		DateTime	13	20	yyyymmdd hhmmss.sss
ProductData Defines the product which the volume measures and/or quality codes are being set					
Product Data					
GlobalProductIdentifier Received Part Number)	Global unique product identifier, i.e., the part number.	String	1	35	char(35)
ManufacturingDateCode	The manufacturers date code on the item. This could also be the LOT number				
MFRGlobalBusinessIdentifier	A unique number that identifies the manufacturer by name and location.	String	1	20	char(20)
MFRrSubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of a manufacturer by name and location.	String	1	20	char(20)
ProductComment	Free form textual comment attached to the product.	String	1	4000	Varchar(4000)
Data Volume Parameters					
DataVolumeParameters Defines the measurement name and parameters for capturing quality volume data					
MeasurementName	Unique Measurement Name	String	1	50	char(50)
WorkCenter	Work center where the measurement is to take place	String	1	20	char(20)
MeasurementStartDateTime	Measurement effective start date	DateTime	13	20	yyyymmddhh mmss.sss
Sampling Ratio	The percentage of products to sample	int			
Station	The station where the measurement is to take place	String	1	20	char(20)
MeasurementEndDateTime	Measurement effective end date	DateTime	13	20	yyyymmddhh mmss.sss
Entity Definition					
Entity Definition Defines if data will be captured or not at certain entity level. Also defines the entity that the quality codes defined will be associated					
EntityName	Defines the entity at which data should be captured	String	1	50	char(50)
EntityStartDateTime	Effective date to start collecting data at the entity level	DateTime	13	20	yyyymmddhh mmss.sss

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
EntityEndDateTime	Effective date to stop collecting data at the entity level	DateTime	13	20	yyyymmddhh mmss.sss
Quality Codes					
QualityCodes The Quality codes defined for a product and entity					
CodeType	The code type to be collected at the current entity	String	1	20	char(20)
CodeTypeDescription	Code type description	String	1	500	char(500)
CodeValue	The code value associated with the code type	String	1	50	char(50)
CodeValueDescription	Code value description	String	1	500	char(500)
CodeSubValue	Further define the code value	String	1	50	char(50)
CodeSubValueDescription	Code sub value description	String	1	500	char(500)
CodeStartDateTime	Effective start date that these value for this entity with this product	DateTime	13	20	yyyymmddhh mmss.sss
CodeEndDateTime	Effective end date that these values for this entity with this product	DateTime	13	20	yyyymmddhh mmss.sss
FromRole.PartnerRoleDescription The collection of business properties that describes a business partner's role in a partner interface process.					
GlobalPartnerRoleClassificationCode	Code identifying a party's role in thesupply chain. Values: RSP = Repair Service Provider OEM = Original Equipment Mfg.	String	3	3	char(3)
PartnerDescription The collection of business properties that describes a business partner's identity and their function in a supply chain.					
GlobalPartnerclassificationCode	Values: RSP = Repair Service Provider OEM = Original Equipment Mfg.	String	3	3	char3
BusinessDescription					
BusinessIdentifier	Defines the company that is sending the file.				
GlobalSupplyChainCode					
ContactInformation					
ContactName.FreeFormText	Name of the contact person(s) within the Repair Provider organization.				

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
TelephoneNumber.Communications Number	The numerical schema designed to achieve contact via telephone.				
EmailAddress	E-mail address.	String	1		
ToRole.PartnerRoleDescription The collection of business properties that describes a business partner's role in a partner interface process.					
GlobalPartnerRoleClassificationCode	Code identifying a party's role in the supply chain.	String	1		
PartnerDescription The collection of business properties that describes a business partner's identity and their function in a supply chain.					
GlobalPartnerClassificationCode					
BusinessDescription					
Business Identifier					
GlobalSupplyChainCode	Code identifying the supply chain for the partner's function. Values: Information Technology = The Information Technology Supply Chain	String	1		
thisDocumentGenerationDateTime.DateTimeStamp	Specifies an instance in time. Based on the ISO 8601 specification where CC = century YY = year MM = month DD = day T = date/time separator hh mm ss.sss = hour, minute, second respectively This representation is immediately followed by a Z. Z = Coordinated Universal Time Informal format: CCYYMMDDThhmmss.sssZ	DateTime	13	20	yyyymmddhhmmss.sss
thisDocumentIdentifier.ProprietaryDocumentIdentifier	Unique identifier, i.e., a numeric value or alpha-numeric value for a business document.	String	1		

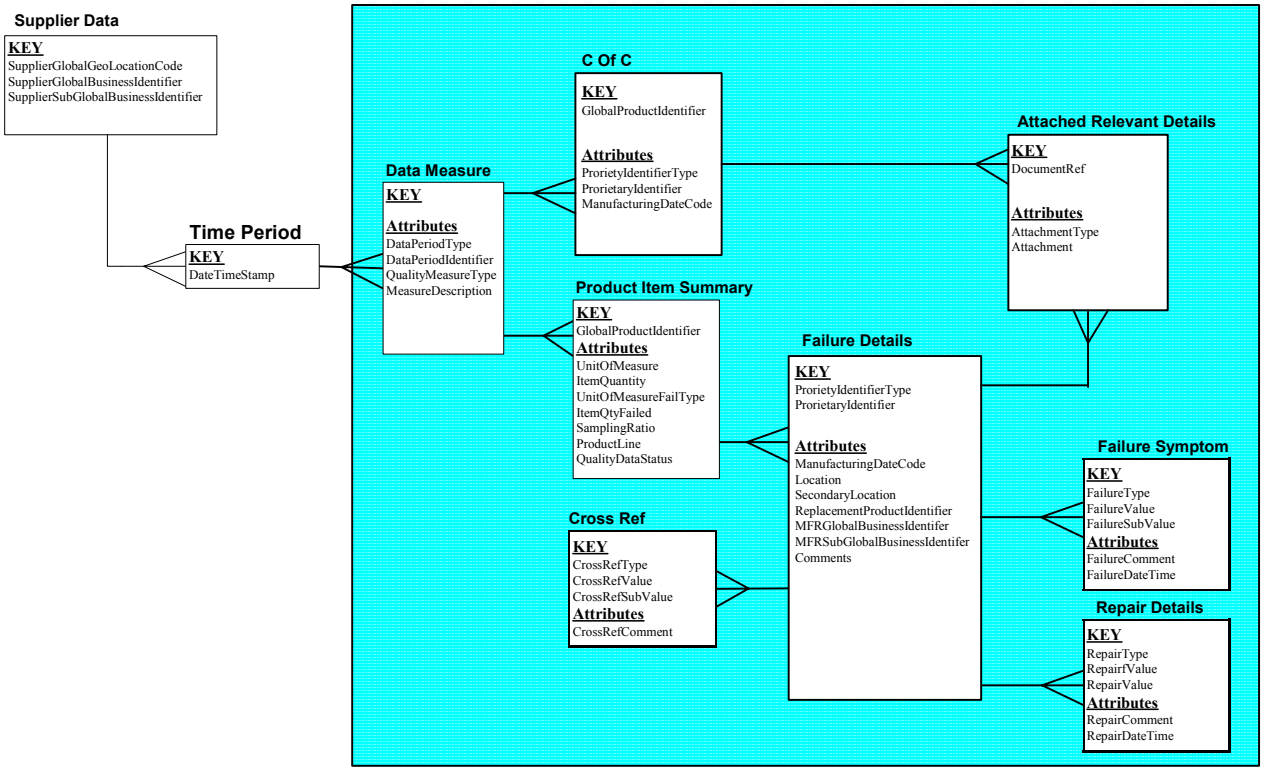
6.2 Quality Exceptions/Incidents – ERD, XML and Glossary



6.2.1 XML Layout – (Quality Exceptions/Incidents)

6.2.2 XML Glossary –(Quality Exceptions/Incidents)

6.3 Proactive Quality– Manufacturing/Assemble/Test – ERD, XML and Glossary



6.3.1 XML Layout (Manufacturing/Assemble/Test model)

Key:
Qty 1 = required *if the group under which it falls contains data*
(Items in bold are group names.)
Qty 0..1 = optional.
Qty 1..n = 1 or more item(s) required.

Line Qty	Name
1	**QualityManufacturingData**
1	|--Version
1	**|--SupplierData**
0..1	| |--SupplierGlobalGeoLocationCode
1	| |--SupplierGlobalBusinessIdentifier
0..1	| |--SupplierSubGlobalBusinessIdentifier
1..n	| **|--TimePeriod**
1	| | |--DateTimeStamp
0..n	| | |--**DataMeasure**
1	| | | |--DataPeriodType
1	| | | |--DataPeriodIdentifier
1	| | | |--QualityMeasureType
1	| | | |--MeasureDescription
1	| | **|--CofC**
1	| | | |--GlobalProductIdentifier
0..1	| | | |--ProrietyIdentifierType
0..1	| | | |--ProrietaryIdentifier
0..1	| | | |--ManufacturingDateCode
0..n	| | | |--**CofCAttachments**
1	| | | | |-- DocumentRef
1	| | | | |-- AttachmentType
1	| | | | |-- Attachment
1	| | **|--Product Item Summary**
1	| | | |--GlobalProductIdentifier
0..1	| | | |--UnitOfMeasure
0..1	| | | |--ItemQuantity
0..1	| | | |--UnitOfMeasureFailType
0..1	| | | |--ItemQtyFailed
0..1	| | | |--SamplingRatio
0..1	| | | |--ProductLine
0..1	| | | |--QualityDataStatus
0..n	| | | |--**FailureDetails**
1	| | | | |-- ProrietyIdentifierType
1	| | | | |-- ProrietaryIdentifier

0..1 | | | | |-- ManufacturingDateCode
0..1 | | | | |-- Location
0..1 | | | | |-- SecondaryLocation
0..1 | | | | |-- ReplacementProductIdentifier
0..1 | | | | |-- MFRGlobalBusinessIdentifer
0..1 | | | | |-- MFRSubGlobalBusinessIdentifer
0..1 | | | | |-- Comments
0..n | | | | |-- **FailureSymptom**
1 | | | | | |--FailureType
1 | | | | | |--FailureValue
0..1 | | | | | |--FailureSubValue
0..1 | | | | | |--FailureComment
0..1 | | | | | |--FailureDateTime
0..n | | | | |--**RepairDetails**
1 | | | | | |--RepairType
1 | | | | | |--RepairValue
0..1 | | | | | |--RepairSubValue
0..1 | | | | | |--RepairComment
0..1 | | | | | |--RepairDateTime
0..n | | | | |--**CrossRef**
1 | | | | | |--CrossRef Type
1 | | | | | |--CrossRef Value
0..1 | | | | | |--CrossRef SubValue
0..1 | | | | | |--CrossRefComment
0..n | | | | |--**FailureDetailAttachments**
1 | | | | | |-- DocumentRef
1 | | | | | |-- AttachmentType
1 | | | | | |-- Attachment
1 |--**FromRole.PartnerRoleDescription**
1 |--GlobalPartnerRoleClassificationCode
1 |--PartnerDescription
1 |--GlobalPartnerClassificationCode
1 |--BusinessDescription
1 |--BusinessIdentifier
1 |--GlobalSupplyChainCode
1..n |--ContactInformation
1 | |--ContactName.FreeFormText
1..n | |--telephoneNumber.CommunicationsNumber
1..n | |--EmailAddress
1 |--**ToRole.PartnerRoleDescription**
1 |--GlobalPartnerRoleClassificationCode
1 |--PartnerDescription

1 |--GlobalPartnerClassificationCode

1 |--BusinessDescription

1 |--BusinessIdentifier

1 |--GlobalSupplyChainCode

1 |--thisDocumentGenerationDateTime.DateTimeStamp

1 |--thisDocumentIdentifier.ProprietaryDocumentIdentifier

6.3.2 XML Glossary – (Manufacturing/Assemble/Test model)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
QualityManufacturingData The collection of business properties that describes the quality data sent from the Repair Provider to the Supply Chain					
Version	Version of the document. Value: 1.5				
SupplierData					
SupplierGlobalGeoLocationCode	Code identifying a geographic location. (note:Need to find RosettaNet Standard) Example Values: AM = Americas AP = Asia Pacific EU = Europe	String	1	20	char(20)
SupplierGlobalBusinessIdentifier	A unique number that identifies the customer by name and location.	String	1	20	char(20)
SupplierSubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of a customer by name and location.	String	1	20	char(20)
TimePeriod					
DateTimeStamp		DateTime	13	20	yyyymmddhhmmss.sss
Data Measure					
DataMeasure					
DataPeriodType		DateTime	13	20	yyyymmddhhmmss.sss
DataPeriodIdentifier		String	1	25	Char (25)
QualityMeasureType		String	1	25	Char (25)
MeasureDescription		String	1	4000	Varchar(4000)

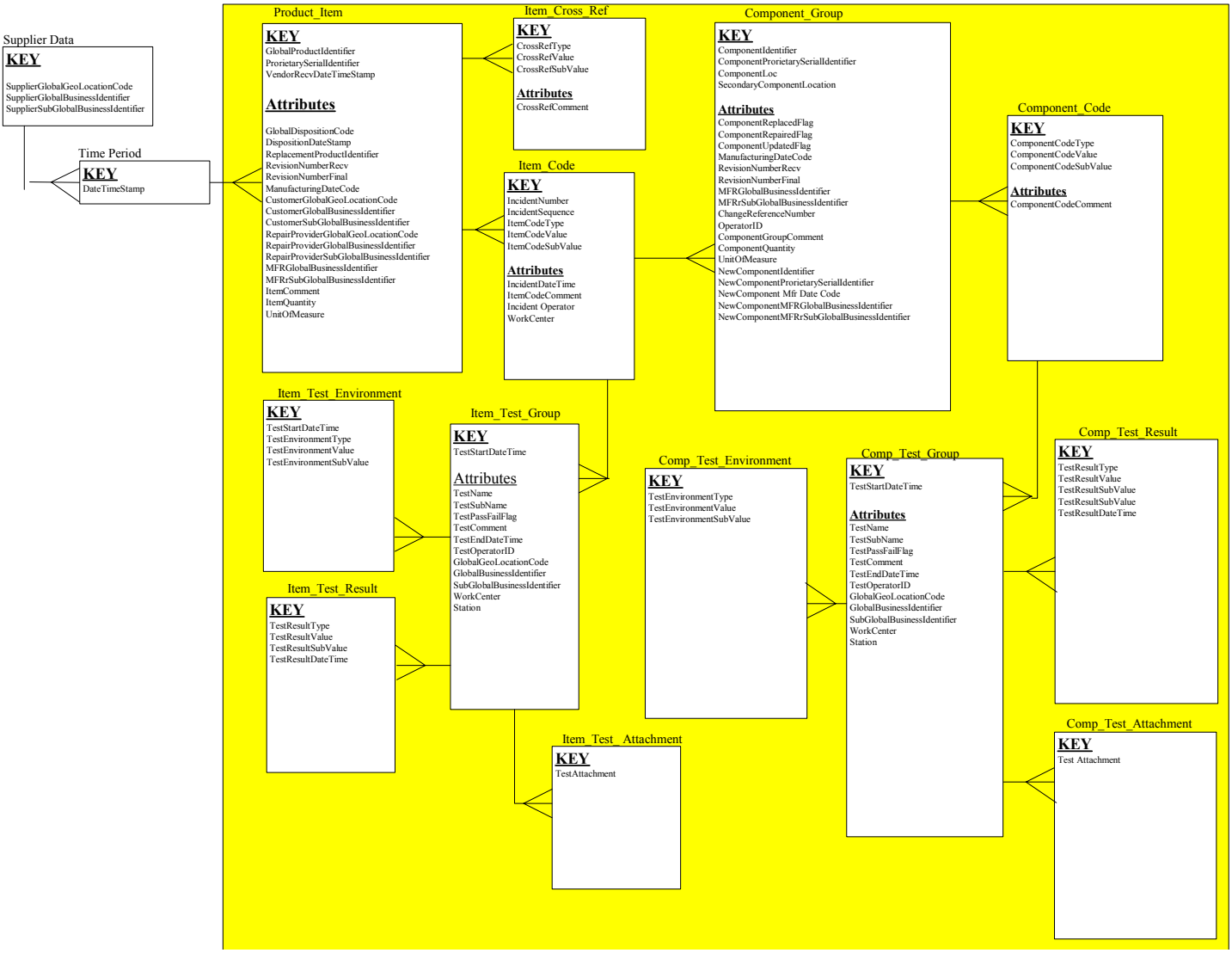
XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
CofC					
CofC					
GlobalProductIdentifier	Global unique product identifier, i.e., the part number.	String	1	35	char(35)
ProrietyIdentifierType		String	1	25	Char (25)
ProrietaryIdentifier		String	1	25	Char (25)
ManufacturingDateCode	The manufacturers date code on the item				
CofC Attachments					
CofCAttachments					
DocumentRef	Unique Document reference number or identifier				
AttachmentType	Indicates the type of document				
Attachment	Actual attachment				
Product Item Summary					
Product Item Summary					
GlobalProductIdentifier	Global unique product identifier, i.e., the part number.	String	1	35	char(35)
UnitOfMeasure					
ItemQuantity					
UnitOfMeasureFailType					
ItemQtyFailed					
SamplingRatio					
ProductLine					
QualityDataStatus					
FailureDetails					
FailureDetails					
ProrietyIdentifierType	Identifies the type of part identifier: i.e Serial Number, Lot etc...	String	1	20	char(20)
ProrietaryIdentifier	Part Identifier	String	1	35	char(35)
ManufacturingDateCode					
Location	Location Of failure on item.	String	1	50	char(50)
SecondaryLocation	This field is used to further define the Location of the failure on item.	String	1	50	char(50)
ReplacementProductIdentifier	Replacement Product identifier of the part which is replacing the product.	String	1	35	char(35)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
MFRGlobalBusinessIdentifer	A unique number that identifies the manufacturer by name and location.	String	1	20	char(20)
MFRSubGlobalBusinessIdentifer	A secondary piece of information that will identify a specific instance of a manufacturer by name and location.	String	1	20	char(20)
Comments		String	1	4000	Varchar(4000)
FailureSymptom					
FailureSymptom					
FailureType		String	1	20	char(20)
FailureValue		String	1	50	char(50)
FailureSubValue		String	1	50	char(50)
FailureComment		String	1	4000	Varchar(4000)
FailureDateTime		DateTime	13	20	yyyymmddhhmmss.sss
RepairDetails					
RepairDetails					
RepairType		String	1	20	char(20)
RepairValue		String	1	50	char(50)
RepairSubValue		String	1	50	char(50)
RepairComment		String	1	4000	Varchar(4000)
RepairDateTime		DateTime	13	20	yyyymmddhhmmss.sss
CrossRef					
CrossRef A reference number used as an alternate way to identifying the current material item being repaired.					
CrossRefType	Used to cross reference documents or other material associated with the current item. Example Values: PO = Purchase Order SO = Service Order SN = Serial Number MEN= Master Event Number POI=Purchase Order IN POO=Purchase Order Out RMA= Returned Material Authorization	String	1	20	char(20)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
CrossRefValue	The service order number, purchase order or Serial Number related to the material being repaired.	String	1	50	char(50)
CrossRefSubValue	A further definition of the RefValue	String	1	50	char(50)
CrossRefComment	Provide the ability for a comment to be associated with the Cross Reference	String	1	4000	Varchar(4000)
FailureDetailAttachment					
FailureDetailAttachment					
DocumentRef	Unique Document reference number or identifier				
AttachmentType	Indicates the type of document				
Attachments	Actual attachment				
FromRole.PartnerRoleDescription The collection of business properties that describes a business partner's role in a partner interface process.					
GlobalPartnerRoleClassificationCode	Code identifying a party's role in thesupply chain. Values: RSP = Repair Service Provider OEM = Original Equipment Mfg.	String	3	3	char(3)
PartnerDescription The collection of business properties that describes a business partner's identity and their function in a supply chain.					
GlobalPartnerclassificationCode	Values: RSP = Repair Service Provider OEM = Original Equipment Mfg.	String	3	3	char3
BusinessDescription					
BusinessIdentifier					
GlobalSupplyChainCode					
ContactInformation					
ContactName.FreeFormText	Name of the contact person(s) within the Repair Provider organization.				
TelephoneNumber.CommunicationsNumber	The numerical schema designed to achieve contact via telephone.				
EmailAddress	E-mail address.	String	1		
ToRole.PartnerRoleDescription The collection of business properties that describes a business partner's role in a partner interface process.					
GlobalPartnerRoleClassificationCode	Code identifying a party's role in the supply chain.	String	1		

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
PartnerDescription The collection of business properties that describes a business partner's identity and their function in a supply chain.					
GlobalPartnerClassificationCode					
BusinessDescription					
Business Identifier					
GlobalSupplyChainCode	Code identifying the supply chain for the partner's function. Values: Information Technology = The Information Technology Supply Chain	String	1		
thisDocumentGenerationDateTime.DateTimeStamp	Specifies an instance in time. Based on the ISO 8601 specification where CC = century YY = year MM = month DD = day T = date/time separator hh mm ss.sss = hour, minute, second respectively This representation is immediately followed by a Z. Z = Coordinated Universal Time Informal format: CCYYMMDDThhmmss.sssZ	DateTime	13	20	yyyymmddhhmmss.sss
thisDocumentIdentifier.ProprietaryDocumentIdentifier	Unique identifier, i.e., a numeric value or alpha-numeric value for a business document.	String	1		

5.1 Proactive Quality Repair Data exchange model – ERD, XML and Glossary



6.3.3 XML Layout – (Proactive Quality Repair Data exchange model)

Key:
Qty 1 = required *if the group under which it falls contains data*. (For example, if ComponentGroup = 0,ComponentKey = 0 as well. But if ComponentGroup qty = 1, ComponentKey = 1, i.e.,is required.
(Items in bold are group names.)
Qty 0..1 = optional.
Qty 1..n = 1 or more item(s) required.

Line	Qty	Name
1		**QualityRepairData**
1		|--Version
1		**|--SupplierData**
0..1	|	|--SupplierGlobalGeoLocationCode
1	|	|--SupplierGlobalBusinessIdentifier
0..1	|	|--SupplierSubGlobalBusinessIdentifier
1..n	|	**|--TimePeriod**
1	|	| |--DateTimeStamp
0..n	|	| |--**QualityRecord**
1	|	| | |--**ItemKey**
1	|	| | |--GlobalProductIdentifier
0..1	|	| | |--ProprietarySerialIdentifier
1	|	| | |--VendorRecvDateTimeStamp
1	|	| **|--Product_Item**
1	|	| | |--GlobalDispositionCode
1	|	| | |--DispositionDateStamp
0..1	|	| | |--ReplacementProductIdentifier
0..1	|	| | |--RevisionNumberRecv
0..1	|	| | |--RevisionNumberFinal
0..1	|	| | |--ManufacturingDateCode
0..1	|	| | |--CustomerGlobalGeoLocationCode
0..1	|	| | |--CustomerGlobalBusinessIdentifier
0..1	|	| | |--CustomerSubGlobalBusinessIdentifier
0..1	|	| | |--RerpairProviderGlobalGeoLocationCode
0..1	|	| | |--RerpairProviderGlobalBusinessIdentifier
0..1	|	| | |--RerpairProviderSubGlobalBusinessIdentifier
0..1	|	| | |--MFRGlobalBusinessIdentifier
0..1	|	| | |--MFRrSubGlobalBusinessIdentifier
0..1	|	| | |--ItemComment
0..1	|	| | |--ItemQuantity
0..1	|	| | |--UnitOfMeasure
0..n	|	| | |--**CrossRef**
1	|	| | | |-- CrossRef Type

1 | | | | |-- CrossRef Value
0..1 | | | | |-- CrossRef SubValue
0..1 | | | | |-- CrossRefComment
0..n | | | |--**ItemCode**
1 | | | | |--IncidentNumber
1 | | | | |--IncidentSequence
1 | | | | |--ItemCodeType
1 | | | | |--ItemCodeValue
0..1 | | | | |--ItemCodeSubValue
0..1 | | | | |--IncidentDateTime
0..1 | | | | |--ItemCodeComment
0..1 | | | | |--Incident Operator
0..1 | | | | |--WorkCenter
0..n | | | | |--**ItemTestGroup**
1 | | | | | |--TestStartDateTime
0..1 | | | | | |--TestName
0..1 | | | | | |--TestSubName
0..1 | | | | | |--TestPassFailFlag
0..1 | | | | | |--TestComment
0..1 | | | | | |--TestEndDateTime
0..1 | | | | | |--TestOperatorID
0..1 | | | | | |--GlobalGeoLocationCode
0..1 | | | | | |--GlobalBusinessIdentifier
0..1 | | | | | |--SubGlobalBusinessIdentifier
0..1 | | | | | |--WorkCenter
0..1 | | | | | |--Station
0..n | | | | | |--**ItemTestEnvironment**
1 | | | | | | |--TestEnvironmentType
1 | | | | | | |--TestEnvironmentValue
0..1 | | | | | | |--TestEnvironmentSubValue
0..n | | | | | |--**ItemTestResult**
1 | | | | | | |--TestResultType
1 | | | | | | |--TestResultValue
0..1 | | | | | | |--TestResultSubValue
0..1 | | | | | | |--TestResultDateTime
0..n | | | | | |--**ItemTestAttachment**
1 | | | | | | |--TestAttachment
0..n | | | | |--**ComponentGroup**
1 | | | | | |--ComponentIdentifier
0..1 | | | | | |--ComponentProrietarySerialIdentifier
1 | | | | | |--ComponentLoc
0..1 | | | | | |--SecondaryComponentLocation

0..1 | | | | | |--ComponentReplacedFlag
0..1 | | | | | |--ComponentRepairedFlag
0..1 | | | | | |--ComponentUpdatedFlag
0..1 | | | | | |--ManufacturingDateCode
0..1 | | | | | |--RevisionNumberRecv
0..1 | | | | | |--RevisionNumberFinal
0..1 | | | | | |--MFRGlobalBusinessIdentifier
0..1 | | | | | |--MFRSubGlobalBusinessIdentifier
0..1 | | | | | |--ChangeReferenceNumber
0..1 | | | | | |--OperatorID
0..1 | | | | | |--ComponentGroupComment
0..1 | | | | | |--ComponentQuantity
0..1 | | | | | |--UnitOfMeasure
0..1 | | | | | |--NewComponentIdentifier
0..1 | | | | | |--NewComponentProrietarySeriaIdentifier
0..1 | | | | | |--NewComponent Mfr Date Code
0..1 | | | | | |--NewComponentMFRGlobalBusinessIdentifier
0..1 | | | | | |--NewComponentMFRSubGlobalBusinessIdentifier
0..n | | | | | |--**ComponentCode**
1 | | | | | | |--ComponentCodeType
1 | | | | | | |--ComponentCodeValue
0..1 | | | | | | |--ComponentCodeSubValue
0..1 | | | | | | |--ComponentCodeComment
0..n | | | | | | |--**CompTestGroup**
1 | | | | | | | |--TestStartDateTime
0..1 | | | | | | | |--TestName
0..1 | | | | | | | |--TestSubName
0..1 | | | | | | | |--TestPassFailFlag
0..1 | | | | | | | |--TestComment
0..1 | | | | | | | |--TestEndDateTime
0..1 | | | | | | | |--TestOperatorID
0..1 | | | | | | | |--GlobalGeoLocationCode
0..1 | | | | | | | |--GlobalBusinessIdentifier
0..1 | | | | | | | |--SubGlobalBusinessIdentifier
0..1 | | | | | | | |--WorkCenter
0..1 | | | | | | | |--Station
0..n | | | | | | | |--**CompTestEnvironment**
1 | | | | | | | | |--TestEnvironmentType
1 | | | | | | | | |--TestEnvironmentValue
0..1 | | | | | | | | |--TestEnvironmentSubValue
0..n | | | | | | | |--**CompTestResult**

1 | | | | | | | | |--TestResultType
1 | | | | | | | | |--TestResultValue
0..1 | | | | | | | | |--TestResultSubValue
0..1 | | | | | | | | |--TestResultDateTime
0..n | | | | | | | |--**CompTestAttachment**
1 | | | | | | | | |--TestAttachment
1 |--**FromRole.PartnerRoleDescription**
1 |--GlobalPartnerRoleClassificationCode
1 |--PartnerDescription
1 |--GlobalPartnerClassificationCode
1 |--BusinessDescription
1 |--BusinessIdentifier
1 |--GlobalSupplyChainCode
1..n |--ContactInformation
1 | |--ContactName.FreeFormText
1..n | |--telephoneNumber.CommunicationsNumber
1..n | |--EmailAddress
1 |--**ToRole.PartnerRoleDescription**
1 |--GlobalPartnerRoleClassificationCode
1 |--PartnerDescription
1 |--GlobalPartnerClassificationCode
1 |--BusinessDescription
1 |--BusinessIdentifier
1 |--GlobalSupplyChainCode
1 |--thisDocumentGenerationDateTime.DateTimeStamp
1 |--thisDocumentIdentifier.ProprietaryDocumentIdentifier

6.3.4 XML Glossary – (Proactive Quality Repair Data exchange model)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
QualityRepairData The collection of business properties that describes the quality data sent from the Repair Provider to the Supply Chain					
Version	Version of the document. Value: 1.5				
SupplierData					
SupplierGlobalGeoLocationCode	Code identifying a geographic location. (note:Need to find RosettaNet Standard) Example Values: AM = Americas AP = Asia Pacific EU = Europe	String	1	20	char(20)
SupplierGlobalBusinessIdentifier	A unique number that identifies the customer by name and location.	String	1	20	char(20)
SupplierSubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of a customer by name and location.	String	1	20	char(20)
TimePeriod					
DateTimeStamp		DateTime	13	20	yyyymmddhhmmss.sss
QualityRecord An individual record of quality data for each piece of material processed					
Product Item					
Item Key The key to the material item being repaired					
GlobalProductIdentifier (Received Part Number)	Global unique product identifier, i.e., the HP part number.	String	1	35	char(35)
ProprietarySerialIdentifier (Part Serial Number)	Serial number on the material.	String	1	25	Char (25)
VendorRecvDateTimeStamp (Vendor Receive Date)	Date and time stamp when vendor received	DateTime	13	20	yyyymmddhhmmss.sss

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
ItemData The set of quality data referencing the material item					
GlobalDispositionCode (Disposition)	Code to identify the transaction action. Example Values: Receiving Scrapped Process Scrapped Updated NTF (No Trouble Found) Repaired MFR (Manufacturer Return) *Note:* *Material that has been Repaired and Updated has disposition of Repair.* *Material that is NTF and updated has a disposition of Updated.* *Material that is NTF cannot have been Updated or Repaired.*	String	1	20	char(20)
DispositionDateStamp (Disposition Date)	Date of disposition.	DateTime	13	20	yyyymmddhhmmss.sss
ReplacementProductIdentifier (Completed Part Number)	Replacement Product identifier of the part which is replacing the product.	String	1	35	char(35)
RevisionNumberRecv (Revision Received)	Revision number on part when received.	String	1	10	char(10)
RevisionNumberFinal (Revision Completed)	Final revision number assigned.	String	1	10	char(10)
ManufacturingDateCode	The manufacturers date code on the item				
CustomerGlobalGeoLocationCode	Code identifying a geographic location. (note:Need to find RosettaNet Standard) Example Values: AM = Americas AP = Asia Pacific EU = Europe	String	1	20	char(20)
CustomerGlobalBusinessIdentifier	A unique number that identifies the customer by name and location.	String	1	20	char(20)
CustomerSubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of a customer by name and location.	String	1	20	char(20)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
RepairProviderGlobalGeoLocationCode	Code identifying a geographic location. (note:Need to find RosettaNet Standard) Example Values: AM = Americas AP = Asia Pacific EU = Europe	String	1	20	char(20)
RerpairProviderGlobalBusinessIdentifier	A unique number that identifies the repair provider by name and location.	String	1	20	char(20)
RerpairProviderSubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of a repair provider by name and location.	String	1	20	char(20)
MFRGlobalBusinessIdentifier	A unique number that identifies the manufacturer by name and location.	String	1	20	char(20)
MFRrSubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of a manufacturer by name and location.	String	1	20	char(20)
ItemComment	Free form textual comment attached to the Item.	String	1	4000	Varchar(4000)
ItemQuantity	The quantity of material represented by the disposition. In most cases this value should by 1. If value is more then one then fields such as serial number should remain blank	Int	1	N/A	
UnitOfMeasure	Defines the grouping associated with the Item Quantity	String	1	20	char(20)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
Item Cross Reference					
CrossRef A reference number used as an alternate way to identifying the current material item being repaired.					
CrossRefType	Used to cross reference documents or other material associated with the current item. Example Values: PO = Purchase Order SO = Service Order SN = Serial Number MEN= Master Event Number POI=Purchase Order IN POO=Purchase Order Out RMA= Returned Material Authorization	String	2	3	char(3)
CrossRefValue	The service order number, purchase order or Serial Number related to the material being repaired.	String	1	50	char(50)
CrossRefSubValue	A further definition of the RefValue	String	1	50	char(50)
CrossRefComment	Provide the ability for a comment to be associated with the Cross Reference	String	1	4000	Varchar(4000)
Item Code					
ItemCode Repair and/or Failure codes associated with the item					
IncidentNumber	Identifies a unique incident for the “event” of this material coming through the repair process. The incident number will allow the codes identifying the failure to be linked to the codes that identify the repair	String	1	50	char(50)
IncidentSequence	Allows for additional instances within an incident number	String	1	50	char(50)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
ItemCodeType	Indicates if the item code value for the item is a failure code or repair code. Also identifies if it is a primary or secondary code. These codes are to be worked out between the repair provider/supplier and the company collecting the quality data. Example Values: R1 = Primary Repair Code R2 = Secondary Repair Code F1 = Primary Fail Code F2 = Secondary Fail Code RD = Reference Data	String	2	20	Char(20)
ItemCodeValue (Unit Repair or Fail Code)	Repair/Failure code related to the item. The values put in this field are prearranged between the repair provider/supplier and the company collecting the quality data.	String	1	50	char(50)
ItemCodeSubValue (Unit Repair or Fail Code)	A further definition of the ItemCodeValue	String	1	50	char(50)
IncidentDateTime	Date and time that the incident was recorded	DateTime	13	20	yyyymmddhhmmss.sss
ItemCodeComment	Free form textual comment attached to the Itemcode.	String	1	4000	varchar(4000)
Incident Operator	Identifies the Operator who logged the Incident failure code or repair code.	String	1	50	char(50)
WorkCenter	The work center where the failure or repair incident took place.	String	1	20	Char(20)
Item Test Group					
ItemTestGroup These are tests related to the Item Code failure or repair.					
TestStartDateTime	Start time for the test				
TestName	Name of the test	String	1	50	char(50)
TestSubName	Sub name of the test within the test	String	1	50	char(50)
TestPassFailFlag	Flag Indicating if the test passed or failed Value “P” = Test Passed Value “F” = Test Failed	String	1	1	char(1)
TestComment	Free form textual comment attached to the ItemTestGroup.	String	1	4000	varchar(4000)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
TestEndDateTime	Test End Date and Time	DateTime	13	20	yyyymmddhhmmss.sss
TestOperatorID	Identifies the Operator who performed the test.	String	1	50	char(50)
GlobalGeoLocationCode	Code identifying a geographic location. Values: AM = Americas AP = Asia Pacific EU = Europe	String	1	3	char(3)
GlobalBusinessIdentifier	A unique number that identifies who performed the test. Identifies name and location.	String	1	20	char(20)
SubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of who performed the test by name and location.	String	1	20	char(20)
WorkCenter	Work center where the test took place	String	1	20	char(20)
Station	Station where the test took place	String	1	20	char(20)
Item Test Environment					
ItemTestEnvironment Identifies the values or conditions of the test environment at the time of the test.					
TestEnvironmentType	Defines the test environment type	String	1	20	char(20)
TestEnvironmentValue	Defines the environment Value	String	1	50	char(50)
TestEnvironmentSubValue	Further defines the environment value	String	1	50	char(50)
Item Test Result					
ItemTestResult Group that defines the results of the test					
TestResultType	Defines the test result type	String	1	20	char(20)
TestResultValue	Defines the test result value	String	1	50	char(50)
TestResultSubValue	Further defines the test result value	String	1	50	char(50)
TestResultDateTime	Date and time of the test result	DateTime	13	20	yyyymmddhhmmss.sss

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
Item Test Attachment					
ItemTestAttachment Attachments referencing the test					
TestAttachment	Attachments referencing the test				
Component Group					
ComponentGroup A repeating group showing the components that were processed as part of the repair					
ComponentIdentifier (Component Part Number)	Part number of the component being referenced.	String	1	35	char(35)
ComponentProrietarySerialIdentifier	Serial number on the component.	String	1	25	Char (25)
ComponentLoc (Location)	Location of component on item.	String	1	50	char(50)
SecondaryComponentLocation	This field is used to further define the Location of a component on an item.	String	1	50	char(50)
ComponentReplacedFlag (Replaced? (Y/N)	Code identifying the component was Replaced. Values: Yes = Component was replaced No = Component was not replaced	String	2	3	char(3)
ComponentRepairedFlag (Repaired? (Y/N)	Code identifying the component was Repaired. Values: Yes = Component was part of repair No = Component was not part of repair	String	2	3	char(3)
ComponentUpdatedFlag (Updated? (Y/N)	Code identifying the component was Updated. Values: Yes = Component was part of update process No = Component was not part of update process	String	2	3	char(3)
ManufacturingDateCode	The manufacturers date code on the component. This may include LOT number				
RevisionNumberRecv (Revision Received)	Revision of component when received.	String	1	10	char(10)
RevisionNumberFinal (Revision Completed)	Final revision number of component.	String	1	10	char(10)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
MFRGlobalBusinessIdentifier	The manufacturer of the component	String	1	20	char(20)
MFRSubGlobalBusinessIdentifier	Further defines the manufacturer of the component	String	1	20	char(20)
ChangeReferenceNumber	Reference to the Engineering change order (ECO)	String	1	25	Char (25)
OperatorID	Operator Id Responsible for the component repair or diagnostics of the Item	String	1	50	char(50)
ComponentGroupComment	Free form textual comment attached to the ComponentGroup.	String	1	4000	varchar(4000)
ComponentQuantity	The quantity of material represented by the disposition. In most cases this value should by 1. If value is more then one then fields such as serial number should remain blank	Int	1	N/A	
UnitOfMeasure	Defines the grouping associated with the Item Quantity	String	1	20	char(20)
NewComponentIdentifier	Part number of the component being referenced.	String	1	35	char(35)
NewComponentProrietarySerialIdentifier	Serial number on the component.	String	1	25	Char (25)
NewComponent Mfr Date Code	The manufacturers date code on the component. This may include LOT number				
NewComponentMFRGlobalBusinessIdentifier	The manufacturer of the component	String	1	20	char(20)
NewComponentMFRSubGlobalBusinessIdentifier	Further defines the manufacturer of the component	String	1	20	char(20)
Component Code					
ComponentCode Repair and/or Failure codes associated with the component					

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
ComponentCodeType	Indicates if the item code value for the item is a failure code or repair code. Also identifies if it is a primary or secondary code. Values: R1 = Primary Repair Code R2 = Secondary Repair Code F1 = Primary Fail Code F2 = Secondary Fail Code RD = Reference Data	String	2	2	char(2)
ComponentCodeValue Component Repair or Fail Code)	Repair/Failure code related to the component. The values put in this field are prearranged by between the repair provider and company collecting the quality data.	String	1	50	char(50)
ComponentCodeSubValue	A further definition of the ComponentCodeValue	String	1	50	char(50)
ComponentCodeComment	Free form textual comment attached to the ComponentCode.	String	1	4000	varchar(4000)
Component Test Group					
CompTestGroup These are tests related to the component Code failure or repair.					
TestStartDateTime	Start time for the test				
TestName	Name of the test	String	1	50	char(50)
TestSubName	Sub name of the test within the test	String	1	50	char(50)
TestPassFailFlag	Flag Indicating if the test passed or failed Value “P” = Test Passed Value “F” = Test Failed	String	1	1	char(1)
TestComment	Free form textual comment attached to the ItemTestGroup.	String	1	4000	varchar(4000)
TestEndDateTime	Test End Date and Time	DateTime	13	20	yyyymmddhhmmss.sss
TestOperatorID	Identifies the Operator who performed the test.	String	1	50	char(50)

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
GlobalGeoLocationCode	Code identifying a geographic location. Values: AM = Americas AP = Asia Pacific EU = Europe	String	1	3	char(3)
GlobalBusinessIdentifier	A unique number that identifies who performed the test. Identifies name and location.	String	1	20	char(20)
SubGlobalBusinessIdentifier	A secondary piece of information that will identify a specific instance of who performed the test by name and location.	String	1	20	char(20)
WorkCenter	Work center where the test took place	String	1	20	char(20)
Station	Station where the test took place	String	1	20	char(20)
Comp Test Environment					
CompTestEnvironment					
TestEnvironmentType	Defines the test environment type	String	1	20	char(20)
TestEnvironmentValue	Defines the environment Value	String	1	50	char(50)
TestEnvironmentSubValue	Further defines the environment value	String	1	50	char(50)
Comp Test Result					
CompTestResult					
TestResultType	Defines the test result type	String	1	20	char(20)
TestResultValue	Defines the test result value	String	1	50	char(50)
TestResultSubValue	Further defines the test result value	String	1	50	char(50)
TestResultDateTime	Date and time of the test result	DateTime	13	20	yyyymmddhhmmss.sss
Comp Test Attachment					
CompTestAttachment Attachments referencing the test					
TestAttachment	Attachments referencing the test				
FromRole.PartnerRoleDescription The collection of business properties that describes a business partner's role in a partner interface process.					

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
GlobalPartnerRoleClassificationCode	Code identifying a party's role in thesupply chain. Values: RSP = Repair Service Provider OEM = Original Equipment Mfg.	String	3	3	char(3)
PartnerDescription The collection of business properties that describes a business partner's identity and their function in a supply chain.					
GlobalPartnerclassificationCode	Values: RSP = Repair Service Provider OEM = Original Equipment Mfg.	String	3	3	char3
BusinessDescription					
BusinessIdentifier					
GlobalSupplyChainCode					
ContactInformation					
ContactName.FreeFormText	Name of the contact person(s) within the Repair Provider organization.				
TelephoneNumber.Communications Number	The numerical schema designed to achieve contact via telephone.				
EmailAddress	E-mail address.	String	1		
ToRole.PartnerRoleDescription The collection of business properties that describes a business partner's role in a partner interface process.					
GlobalPartnerRoleClassificationCode	Code identifying a party's role in the supply chain.	String	1		
PartnerDescription The collection of business properties that describes a business partner's identity and their function in a supply chain.					
GlobalPartnerClassificationCode					
BusinessDescription					
Business Identifier					
GlobalSupplyChainCode	Code identifying the supply chain for the partner's function. Values: Information Technology = The Information Technology Supply Chain	String	1		

XML Name (sample current fieldname)	Definition and Values (where applicable	Data Type	Min	Max	Format
thisDocumentGenerationDateTime.DateTimeStamp	Specifies an instance in time. Based on the ISO 8601 specification where CC = century YY = year MM = month DD = day T = date/time separator hh mm ss.sss = hour, minute, second respectively This representation is immediately followed by a Z. Z = Coordinated Universal Time Informal format: CCYYMMDDThhmmss.sssZ	DateTime	13	20	yyyymmddhhmmss.sss
thisDocumentIdentifier.ProprietaryDocumentIdentifier	Unique identifier, i.e., a numeric value or alpha-numeric value for a business document.	String	1		