

Title Interface Description	Confidentiality Confidential	Document no KS003M0156B01	Revision V1
Project Cyberoptics File Format	Issued by Åsa Gustafsson		Date 2013-04-02

# Interface Description

## Cyberoptics File Format

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## 1 DOCUMENT INFORMATION

### 1.1 Summary

Interface description for Cyberoptic equipment file format.

### 1.2 Terminology

Optional A parameter that is optional can be left blank in the input files.

### 1.3 References

N/A

### 1.4 Revision history

Revision	Comment	Changed by /date	Approved by / date
V1	First version	ASGN/2013-04-02	

## 2 FUNCTION OVERVIEW

There is two specific xml file format interpreted by the Cyberoptic service.

Function	Description	Affected database table
Inspect XML File	XML file contain information about successful tests.	
Rework XML File	XML file containing information about failed tests.	

## 3 MAIN FUNCTIONS

All main considerations and requirements are described in this section.

### 3.1 Bartrack

All individuals have to exist in Bartrack to be accepted.

### 3.2 Naming of test program

Naming convention:

- ROJ208467\_1\_R1A\_T  
T = TOP side or single side and
- ROJ208467\_1\_R1A\_B  
B= Bottom side

### 3.3 Fault code mapping

Below is a table describing the mapping between fault code and operator fault code.

Cyberoptic operator fault code	Fault code
Scratch	PSM16
Lifted	PSM39
Position	PSM44
Missing Part	PSM45
Polarity	PSM72

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<b>Tombstone</b>	PSM81
<b>Wrong Part</b>	PSM96
<b>Billboard</b>	PSM113
<b>Insufficient Solder</b>	PSS35
<b>NoErrorRead</b>	0
<b>Solder Bridge</b>	PSS35
<b>Flux</b>	PSS6
<b>Contamination</b>	PSS68
<b>Excess Solder</b>	PSS82
<b>False Fail</b>	U43
<b>False alarm</b>	U43
<b>Excess Solder</b>	PSS82
<b>Stitch Fault</b>	PRE01*
<b>Stitch Error</b>	PRE01*
<b>Process indicator</b>	PRE02*
<b>Manual Assembly</b>	PRE03*

\* No fault code is received from Ericsson, temporary Fault codes PRE01, PRE02 and PRE03 is used in test.

### 3.4 Modeling

If the modeling supplied in configuration files doesn't exist in Quality database it will be created automatically.

### 3.5 XML Files

For each individual an inspect xml file is created. When *PanelStatus* is Pass or P the xml file is parsed, data extracted and saved to the QSP database. When *PanelStatus* is Fail or F, the xml file is deleted.

For individuals where test failed (*PanelStatus* is Fail) a rework xml file is created. All rework files are parsed, data extracted and saved to the QSP database.

Inspect files where *PanelStatus* is not Pass/P or Fail/F, e.g. Unreviewed, file is moved to the *Error* folder.

The XML files contain namespace. To parse the contents of the file the row containing the root node is replaced:

- `<cyber:FLEX_INFO xmlns:cyber="http://www.cyberoptics.com/Flex/rework">`  
is replaced with  
`<cyber:FLEX_INFO_REWORK>`
- `cyber:FLEX_INFO xmlns:cyber="http://www.cyberoptics.com/Flex/inspect">`  
is replaced with  
`<cyber:FLEX_INFO_INSPECT>`

When the file is parsed and data extracted, the root node is replaced back to original text and then moved to *Success* or *Error* folder.

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### 3.5.1 Inspect XML File

For each inspected product there is one xml file.

Example:

```
<?xml version="1.0"?>
<cyber:FLEX_INFO xmlns:cyber="http://www.cyberoptics.com/Flex/inspect">
  <UserName>kestra</UserName>
  <SystemId>QXSN95034</SystemId>
  <InspectionType>Inspection</InspectionType>
  <Panel Name="Panel" PanelStatus="Pass" StartTime="02/19/2013 16:31:44" EndTime="02/19/2013 16:31:49" CycleTime="5" TotalFeatures="243" TotalLocations="243" LotCode="2013_02_19_16_24_29" LotSize="0" SequenceNumber="11" Barcode="STU8D571067" Code="N/A" NG_Stacker_SlotNumber="NO_SLOT_NUMBER_READ">
    <Assembly>ROJ_208\ROJ208890_1_R3B_B</Assembly>
    <AssemblyLastUpdateTime>20120831074755</AssemblyLastUpdateTime>
    <CAD>D:\QX500\AssemblyInfo\ROJ_208\ROJ208890_1_R3B_B.csv</CAD>
    <PanelInfo PanelInfo1="2013_02_19_16_24_29" PanelInfo2="Inspection completed"/>
    <PanelResult>
      <Attributes>
        <FailedBoards Value="0"/>
        <FailedLocations Value="0"/>
        <FailedFeatures Value="0"/>
        <SetupFailures Value="0"/>
        <PlacementFailures Value="0"/>
        <AppearanceFailures Value="0"/>
      </Attributes>
      <Measurements>
        <XAverage Value="3.68484279220972E-03"/>
        <XRange Value="0.234021525245943"/>
        <XStdDev Value="4.75384787700582E-02"/>
        <YAverage Value="1.46125763433447E-05"/>
        <YRange Value="0.181298492768605"/>
        <YStdDev Value="3.04753359087544E-02"/>
        <AngleAverage Value="-2.86790780362911E-03"/>
        <AngleRange Value="8.35644056217131E-02"/>
        <AngleStdDev Value="1.13373844373946E-02"/>
      </Measurements>
    </PanelResult>
    <Image Name="Board" ImageStatus="Pass" TotalFeatures="6" TotalLocations="6" Barcode="NO_BARCODE_READ" OverallResult="Pass">
      <ImageResult>
        <Attributes>
          <FailedLocations Value="0"/>
          <FailedFeatures Value="0"/>
          <SetupFailures Value="0"/>
          <PlacementFailures Value="0"/>
          <AppearanceFailures Value="0"/>
        </Attributes>
        <Measurements>
          <XAverage Value="3.68484279220972E-03"/>
          <XRange Value="0.234021525245943"/>
          <XStdDev Value="4.75384787700582E-02"/>
          <YAverage Value="1.46125763433447E-05"/>
          <YRange Value="0.181298492768605"/>
          <YStdDev Value="3.04753359087544E-02"/>
          <AngleAverage Value="-2.86790780362911E-03"/>
          <AngleRange Value="8.35644056217131E-02"/>
          <AngleStdDev Value="1.13373844373946E-02"/>
        </Measurements>
      </ImageResult>
      <Location Identifier1="R249" Identifier2="Component\REP617245_33" Identifier3="Component\REP617245_33" LocationStatus="Pass" TotalFeatures="1" LocationInspectionInfo1="" Image1="">
        <LocationResult>
          <Attributes>
            <FailedFeatures Value="0"/>
            <SetupFailures Value="0"/>
            <PlacementFailures Value="0"/>
            <AppearanceFailures Value="0"/>
          </Attributes>
        </LocationResult>
      </Location>
    </Image>
  </Panel>
</cyber:FLEX_INFO>
```

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```

</Attributes>
<Measurements>
  <XAverage Value="2.46608932417728E-02"/>
  <XRange Value="0"/>
  <XStdDev Value="0"/>
  <YAverage Value="-3.01532720524662E-02"/>
  <YRange Value="0"/>
  <YStdDev Value="0"/>
  <AngleAverage Value="-4.8302121328021E-03"/>
  <AngleRange Value="0"/>
  <AngleStdDev Value="0"/>
</Measurements>
</LocationResult>
<Feature Identifier="Body" FeatureStatus="Pass" FeatureInspectionInfo="UNDEFINED" Image1=""
  " MeasurementValid="T" Barcode="">
  <FeatureResult>
    <Measurements>
      <X Value="2.46608932417728E-02" Minimum="-
        2.95869267924301" Maximum="2.95869267924301" Target="0"/>
      <Y Value="-3.01532720524662E-02" Minimum="-
        1.45983246088747" Maximum="1.45983246088747" Target="0"/>
      <Angle Value="-4.8302121328021E-03" Minimum="-10" Maximum="10" Target="0"/>
      <Probability Value="1.16052612706028E-
        02" Minimum="0.000000000001" Maximum="0" Target="0"/>
    </Measurements>
  </FeatureResult>
</Feature>
</Location>
<Location Identifier1="R250" Identifier2="Component\REP617245_33" Identifier3="Component\REP
  617245_33" LocationStatus="Pass" TotalFeatures="1" LocationInspectionInfo1="" Image1="">
  <LocationResult>
    <Attributes>
      <FailedFeatures Value="0"/>
      <SetupFailures Value="0"/>
      <PlacementFailures Value="0"/>
      <AppearanceFailures Value="0"/>
    </Attributes>
    <Measurements>
      <XAverage Value="2.95979211019741E-02"/>
      <XRange Value="0"/>
      <XStdDev Value="0"/>
      <YAverage Value="1.39975107331516E-02"/>
      <YRange Value="0"/>
      <YStdDev Value="0"/>
      <AngleAverage Value="-7.07839630324791E-03"/>
      <AngleRange Value="0"/>
      <AngleStdDev Value="0"/>
    </Measurements>
  </LocationResult>
  <Feature Identifier="Body" FeatureStatus="Pass" FeatureInspectionInfo="UNDEFINED" Image1=""
    " MeasurementValid="T" Barcode="">
    <FeatureResult>
      <Measurements>
        <X Value="2.95979211019741E-02" Minimum="-
          2.95869267924301" Maximum="2.95869267924301" Target="0"/>
        <Y Value="1.39975107331516E-02" Minimum="-
          1.45983246088747" Maximum="1.45983246088747" Target="0"/>
        <Angle Value="-7.07839630324791E-03" Minimum="-10" Maximum="10" Target="0"/>
        <Probability Value="1.48013476696897E-
          04" Minimum="0.000000000001" Maximum="0" Target="0"/>
      </Measurements>
    </FeatureResult>
  </Feature>
</Location>
<Location Identifier1="R253" Identifier2="Component\REP617245_33" Identifier3="Component\REP
  617245_33" LocationStatus="Pass" TotalFeatures="1" LocationInspectionInfo1="" Image1="">
  <LocationResult>
    <Attributes>
      <FailedFeatures Value="0"/>
      <SetupFailures Value="0"/>
    </Attributes>
  </LocationResult>

```

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```

        <PlacementFailures Value="0"/>
        <AppearanceFailures Value="0"/>
    </Attributes>
    <Measurements>
        <XAverage Value="2.62373414619788E-03"/>
        <XRange Value="0"/>
        <XStdDev Value="0"/>
        <YAverage Value="-0.028604845288406"/>
        <YRange Value="0"/>
        <YStdDev Value="0"/>
        <AngleAverage Value="-2.62942974830871E-03"/>
        <AngleRange Value="0"/>
        <AngleStdDev Value="0"/>
    </Measurements>
</Location>
<Feature Identifier="Body" FeatureStatus="Pass" FeatureInspectionInfo="UNDEFINED" Image1="
" MeasurementValid="T" Barcode="">
    <FeatureResult>
        <Measurements>
            <X Value="2.62373414619788E-03" Minimum="-
                2.95869267924301" Maximum="2.95869267924301" Target="0"/>
            <Y Value="-0.028604845288406" Minimum="-
                1.45983246088747" Maximum="1.45983246088747" Target="0"/>
            <Angle Value="-2.62942974830871E-03" Minimum="-10" Maximum="10" Target="0"/>
            <Probability Value="3.73422134428223E-
                04" Minimum="0.000000000001" Maximum="0" Target="0"/>
        </Measurements>
    </FeatureResult>
</Feature>
</Location>
<Location Identifier1="R254" Identifier2="Component\REP617245_33" Identifier3="Component\REP
617245_33" LocationStatus="Pass" TotalFeatures="1" LocationInspectionInfo1="" Image1="">
    <LocationResult>
        <Attributes>
            <FailedFeatures Value="0"/>
            <SetupFailures Value="0"/>
            <PlacementFailures Value="0"/>
            <AppearanceFailures Value="0"/>
        </Attributes>
        <Measurements>
            <XAverage Value="0.118457058310874"/>
            <XRange Value="0"/>
            <XStdDev Value="0"/>
            <YAverage Value="4.12241162921703E-02"/>
            <YRange Value="0"/>
            <YStdDev Value="0"/>
            <AngleAverage Value="-5.9353362468384E-03"/>
            <AngleRange Value="0"/>
            <AngleStdDev Value="0"/>
        </Measurements>
    </LocationResult>
<Feature Identifier="Body" FeatureStatus="Pass" FeatureInspectionInfo="UNDEFINED" Image1="
" MeasurementValid="T" Barcode="">
    <FeatureResult>
        <Measurements>
            <X Value="0.118457058310874" Minimum="-
                2.95869267924301" Maximum="2.95869267924301" Target="0"/>
            <Y Value="4.12241162921703E-02" Minimum="-
                1.45983246088747" Maximum="1.45983246088747" Target="0"/>
            <Angle Value="-5.9353362468384E-03" Minimum="-10" Maximum="10" Target="0"/>
            <Probability Value="2.31857215309946E-
                04" Minimum="0.000000000001" Maximum="0" Target="0"/>
        </Measurements>
    </FeatureResult>
</Feature>
</Location>
<Location Identifier1="R284" Identifier2="Component\REP617245_33" Identifier3="Component\REP
617245_33" LocationStatus="Pass" TotalFeatures="1" LocationInspectionInfo1="" Image1="">
    <LocationResult>
        <Attributes>

```

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```

        <FailedFeatures Value="0"/>
        <SetupFailures Value="0"/>
        <PlacementFailures Value="0"/>
        <AppearanceFailures Value="0"/>
    </Attributes>
    <Measurements>
        <XAverage Value="-3.83189493285769E-02"/>
        <XRange Value="0"/>
        <XStdDev Value="0"/>
        <YAverage Value="1.23928273190934E-02"/>
        <YRange Value="0"/>
        <YStdDev Value="0"/>
        <AngleAverage Value="-3.83786901571526E-03"/>
        <AngleRange Value="0"/>
        <AngleStdDev Value="0"/>
    </Measurements>
</LocationResult>
<Feature Identifier="Body" FeatureStatus="Pass" FeatureInspectionInfo="UNDEFINED" Image1="
" MeasurementValid="T" Barcode="">
    <FeatureResult>
        <Measurements>
            <X Value="-3.83189493285769E-02" Minimum="-
                2.95869267924301" Maximum="2.95869267924301" Target="0"/>
            <Y Value="1.23928273190934E-02" Minimum="-
                1.45983246088747" Maximum="1.45983246088747" Target="0"/>
            <Angle Value="-3.83786901571526E-03" Minimum="-10" Maximum="10" Target="0"/>
            <Probability Value="3.57690869351746E-
                02" Minimum="0.000000000001" Maximum="0" Target="0"/>
        </Measurements>
    </FeatureResult>
</Feature>
</Location>
<Location Identifier1="R285" Identifier2="Component\REP617245_33" Identifier3="Component\REP
617245_33" LocationStatus="Pass" TotalFeatures="1" LocationInspectionInfo1="" Image1="">
    <LocationResult>
        <Attributes>
            <FailedFeatures Value="0"/>
            <SetupFailures Value="0"/>
            <PlacementFailures Value="0"/>
            <AppearanceFailures Value="0"/>
        </Attributes>
        <Measurements>
            <XAverage Value="3.35018710206895E-02"/>
            <XRange Value="0"/>
            <XStdDev Value="0"/>
            <YAverage Value="4.65176242890059E-02"/>
            <YRange Value="0"/>
            <YStdDev Value="0"/>
            <AngleAverage Value="-2.57553853212489E-03"/>
            <AngleRange Value="0"/>
            <AngleStdDev Value="0"/>
        </Measurements>
    </LocationResult>
<Feature Identifier="Body" FeatureStatus="Pass" FeatureInspectionInfo="UNDEFINED" Image1="
" MeasurementValid="T" Barcode="">
    <FeatureResult>
        <Measurements>
            <X Value="3.35018710206895E-02" Minimum="-
                2.95869267924301" Maximum="2.95869267924301" Target="0"/>
            <Y Value="4.65176242890059E-02" Minimum="-
                1.45983246088747" Maximum="1.45983246088747" Target="0"/>
            <Angle Value="-2.57553853212489E-03" Minimum="-10" Maximum="10" Target="0"/>
            <Probability Value="1.72982824215567E-
                03" Minimum="0.000000000001" Maximum="0" Target="0"/>
        </Measurements>
    </FeatureResult>
</Feature>
</Location>
</Image>

```



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```

<Image Name="E97" ImageStatus="Pass" TotalFeatures="0" TotalLocations="0" Barcode="NO_BARCODE_
READ" OverallResult="Pass">
  <ImageResult>
    <Attributes>
      <FailedLocations Value="0"/>
      <FailedFeatures Value="0"/>
      <SetupFailures Value="0"/>
      <PlacementFailures Value="0"/>
      <AppearanceFailures Value="0"/>
    </Attributes>
    <Measurements>
      <XAverage Value="0"/>
      <XRange Value="0"/>
      <XStdDev Value="0"/>
      <YAverage Value="0"/>
      <YRange Value="0"/>
      <YStdDev Value="0"/>
      <AngleAverage Value="0"/>
      <AngleRange Value="0"/>
      <AngleStdDev Value="0"/>
    </Measurements>
  </ImageResult>
  <Location Identifier1="E97" Identifier2="Fiducial\Fid" Identifier3="Fiducial\Fiducial" Locat
ionStatus="Pass" TotalFeatures="0" LocationInspectionInfo1="" Image1="">
    <LocationResult>
      <Attributes>
        <FailedFeatures Value="0"/>
        <SetupFailures Value="0"/>
        <PlacementFailures Value="0"/>
        <AppearanceFailures Value="0"/>
      </Attributes>
      <Measurements>
        <XAverage Value="0"/>
        <XRange Value="0"/>
        <XStdDev Value="0"/>
        <YAverage Value="0"/>
        <YRange Value="0"/>
        <YStdDev Value="0"/>
        <AngleAverage Value="0"/>
        <AngleRange Value="0"/>
        <AngleStdDev Value="0"/>
      </Measurements>
    </LocationResult>
    <Feature Identifier="Fiducial" FeatureStatus="Pass" FeatureInspectionInfo="UNDEFINED" Imag
e1="" MeasurementValid="T" Barcode="">
      <FeatureResult>
        <Measurements>
          <X Value="-9.19714857386189E-02" Minimum="0" Maximum="0" Target="0"/>
          <Y Value="1.21473436453634E-04" Minimum="0" Maximum="0" Target="0"/>
          <Angle Value="-1.32077202698522E-03" Minimum="0" Maximum="0" Target="0"/>
          <Probability Value="0.301748881596228" Minimum="1E-25" Maximum="0" Target="0"/>
        </Measurements>
      </FeatureResult>
    </Feature>
  </Location>
</Image>
</Panel>
</cyber:FLEX_INFO>

```

### 3.5.1.1 Parameters

XML tag	Description	Required	Data Type	Max Length	Not Used
<Username>	Name of the user logged on in SPI.		string		

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<SystemId>	Name of the computer.		string		
<InspectionType>	Type of inspection; At inspection station it is Inspection, at rework station it is Rework.		string		
<Panel>	Contains all the inspection results		Parent tree node		
<Name>	Name of the panel inspected		string		
<PanelStatus>	Inspection Status of Panel; Pass, P, Fail or F. Initial value is "Unreviewed".	Yes	string		
<Startime>	Time inspection started	Yes	string		
<EndTime>	Time inspection ended	No	string		
< CycleTime>		No	Integer		
<TotalFeatures>	Total Features Inspected		string		
<TotalLocations>	Total Locations Inspected		string		
<LotCode>	Lot code of the inspection		string		
<LotSize>	Size of the inspection lot		string		
<SequenceNumber>	Sequence Number of this panel in the lot		string		
<Barcode>	Panel level barcode	Yes	string		
<Code>	Internal use	No	string		
<NG_Stacker_SlotNumber>	Slot number of the NG Stacker.	No	string		
<Assembly>	Assembly Name		string		
<AssemblyLastUpdateTime>	Time for last update of the assembly.		string		
<CAD>	Full Path of the CAD file		string		
<PanellInfo>	Node for internal use.		Parent tree node		
<PanellInfo1>	Node for internal use.	No	String		
<PanellInfo2>	Node for internal use.	No	String		
<PanelResult>	Node contains panel result summary information	No	String		

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<b>&lt;Attributes&gt;</b>		No	Parent tree node		
<b>&lt;FailedBoards&gt;</b>	Node for internal use.	No	Parent tree node		
<Value>	Number of failed boards.	No	Unsigned Integer		
<b>&lt;FailedLocations&gt;</b>	Node for internal use.	No	Parent tree node		
<Value>	Number of failed locations.	No	Integer		
<b>&lt;FailedFeatures&gt;</b>	Node for internal use.	No	Parent tree node		
<Value>	Number of failed features.	No	Integer		
<b>&lt;SetupFailures&gt;</b>	Node for internal use.	No	Parent tree node		
<Value>	Number of setup failures.	No	Integer		
<b>&lt;PlacementFailures&gt;</b>	Node for internal use.	No	Parent tree node		
<Value>	Number of placement failures.	No	Integer		
<b>&lt;AppearanceFailures&gt;</b>	Node for internal use.	No	Parent tree node		
<Value>	Number of internal appearance failures.	No	Integer		
<b>&lt;Measurements&gt;</b>	Measurement values for the feature: X, Y, Angle and Probability.	No	Parent tree node		
<b>&lt;XAverage&gt;</b>	X average node.	No	Parent tree node		
<Value>	X average value.	No	Integer		
<b>&lt;XRange&gt;</b>	X range node.	No	Parent tree node		
<Value>	X range value.	No	Integer		
<b>&lt;XStdDev&gt;</b>	X standard deviation node.	No	Parent tree node		
<Value>	X standard deviation value.	No	Integer		
<b>&lt;YAverage&gt;</b>	Y average node.	No	Parent tree node		
<Value>	Y average value.	No	Integer		
<b>&lt;YRange&gt;</b>	Y range node.	No	Parent tree node		
<Value>	Y range value.	No	Integer		
<b>&lt;YStdDev&gt;</b>	Y standard deviation node.	No	Parent tree node		
<Value>	Y standard deviation value.	No	Integer		
<b>&lt;AngleAverage&gt;</b>	Angle average	No	Parent tree		

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	node.		node		
<Value>	Angle average value.	No	Integer		
<AngleRange>	Angle range node.	No	Parent tree node		
<Value>	Angle range value.	No	Integer		
<AngleStdDev>	Angle standard deviation node.	No	Parent tree node		
<Value>	Angle standard deviation value.	No	Integer		
<Image> (multiple)	Contains all the inspection results for a specific image	No	Parent tree node		
<Name>	Name of the board level image inspected	No	string		
<ImageStatus>	Inspection Status of Image; Initial value is "Unreviewed";	No	string		
<TotalFeatures>	Total Features Inspected in the image	No	Integer		
<TotalLocations>	Total locations Inspected in the image	No	Integer		
<Barcode>	Barcode of the image	No	string		
<OverallResult>		No	string		
<ImageResult>	Node contains image result summary information	No	Parent tree node		
<Attributes>		No	Parent tree node		
<FailedLocations>		No	Parent tree node		
<Value>	Number of failed locations.	No	Integer		
<FailedFeatures>		No	Parent tree node		
<Value>	Number of failed Features.	No	Integer		
<SetupFailures>		No	Parent tree node		
<Value>	Number of setup failures.	No	Integer		
<PlacementFailures>		No	Parent tree node		
<Value>	Number of placement failures.	No	Integer		
<AppearanceFailures>		No	Parent tree		

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<Value>	Number of appearance failures.	No	node Integer		
<Measurements>	Measurement values for the feature: X, Y, Angle and Probability.	No	Parent tree node		
<XAverage>	X average node.	No	Parent tree node		
<Value>	X average value.	No	Double		
<XRange>	X range node.	No	Parent tree node		
<Value>	X range value.	No	Double		
<XStdDev>	X standard deviation node.	No	Parent tree node		
<Value>	X standard deviation value.	No	Double		
<YAverage>	Y average node.	No	Parent tree node		
<Value>	Y average value.	No	Double		
<YRange>	Y range node.	No	Parent tree node		
<Value>	Y range value.	No	Double		
<YStdDev>	Y standard deviation node.	No	Parent tree node		
<Value>	Y standard deviation value.	No	Double		
<AngleAverage>	Angle average node.	No	Parent tree node		
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<Value>	Angle standard deviation value.	No	Double		
<Location> (multiple)	Contains all the inspection results for a specific location under image level	No	Parent tree Node		
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<Identifier2>	Second identifier of location	No	string		
<Identifier3>	Third identifier of location	No	string		
<LocationStatus>	Inspection Status of location	No	string		
<TotalFeatures>	Total Features	No	Integer		

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	Inspected in the location				
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<Image1 >		No	string		
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<Attributes >		No	Parent tree node		
<FailedFeatures >		No	Parent tree node		
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<SetupFailures >		No	Parent tree node		
<Value >	Number of setup failures.	No	Double		
<PlacementFailures >		No	Parent tree node		
<Value >	Number of placement failures.	No	Double		
<AppearanceFailures >		No	Parent tree node		
<Value >	Number of appearance failures.	No	Double		
<Measurements >	Measurement values for the feature: X, Y, Angle and Probability.	No	Parent tree node		
<XAverage >	X average node.	No	Parent tree node		
<Value >	X average value.	No	Double		
<XRange >	X range node.	No	Parent tree node		
<Value >	X range value.	No	Double		
<XStdDev >	X standard deviation node.	No	Parent tree node		
<Value >	X standard deviation value.	No	Double		
<YAverage >	Y average node.	No	Parent tree node		
<Value >	Y average value.	No	Double		
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<Value >	Y range value.	No	Double		
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<Value >	Y standard deviation value.	No	Double		
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<Value>	Angle average value.	No	Double		
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<Value>	Angle range value.	No	Double		
<AngleStdDev>	Angle standard deviation node.	No	Parent tree node		
<Value>	Angle standard deviation value.	No	Double		
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<FeatureInspectionInfo>		No	string		
<Image1>		No	string		
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<Barcode>	Panel level barcode	Yes	string		
<FeatureResult>	Contains all measurement values for this feature	No	Parent tree Node		
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<X>		No	Parent tree Node		
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<Minimum>	Minimum value for X.	No	Double		
<Maximum>	Maximum value for X.	No	Double		
<Target>	Target value for X.	No	Double		
<Y>		No	Parent tree Node		
<Value>	Y value.	No	Double		
<Minimum>	Minimum value for Y.	No	Double		
<Maximum>	Maximum value for Y.	No	Double		
<Target>	Target value for Y.	No	Double		
<Angle>		No	Parent tree Node		

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<Value>	Angle value.	No	Double		
<Minimum>	Minimum value for Angle.	No	Double		
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### 3.5.2 Rework XML File

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<?xml version="1.0"?>
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  <UserName>kestra</UserName>
  <SystemId>REWORK</SystemId>
  <InspectionType>Rework</InspectionType>
  <Panel PanelPassed="F" Category="Defective" StartTime="02/25/2013 16:25:28" EndTime="02/25/2013 16:25:41" Barcode="STU8D571067" LotCode="2013_02_25 16_00_11" LotSize="0" SequenceNumber="9" NG_Stacker_SlotNumber="NO_SLOT_NUMBER_READ">
    <Assembly>1_ROJ 208\1_ROJ208382_1_R7C_T_InspectionOnly</Assembly>
    <PanelResult>
      <Attributes>
        <DefectiveLocations Value="31"/>
        <DefectiveFeatures Value="31"/>
        <FalseFailLocations Value="9"/>
        <FalseFailFailures Value="13"/>
      </Attributes>
    </PanelResult>
    <Image Name="Board" Barcode="NO_BARCODE_READ" ImagePassed="F" Category="Defective">
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        </LocationResult>
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      </Location>
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      </Location>
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        <LocationResult>
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    </LocationResult>
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  </LocationResult>
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  </LocationResult>
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</Location>
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</Location>
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  <LocationResult>
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        </Attributes>
    </LocationResult>
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    33259.jpg"/>
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  </LocationResult>
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  <Feature Identifier="Body" FeatureDefective="T" Category="Defective" ReworkError="Stitch F
    ault" Image1="2013_02_25 16_25_28 1_ROJ208382_1_R7C_T_InspectionOnly.R602W2.Body_A0649332
    59.jpg"/>
</Location>

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<Location Identifier1="R123W2" LocationDefective="T" Category="Defective" ReworkError="Stitch
  h Fault" Image1="2013_02_25 16_25_28 1_ROJ208382_1_R7C_T_InspectionOnly.R123W2_A064933259.
  jpg">
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    59.jpg"/>
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  jpg">
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    .jpg"/>
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    .jpg"/>
</Location>
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  >
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    .jpg"/>
</Location>
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  Fault" Image1="2013_02_25 16_25_28 1_ROJ208382_1_R7C_T_InspectionOnly.R249_A064933259.jpg"
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  <LocationResult>
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  </Location>
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  </Location>
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  </Location>
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  </Location>
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  </Location>
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    </Attributes>
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</Location>
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>
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    <Attributes>
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>
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        <Mounter Vendor="Not Specified" StationID="Not Specified" FeederNo="Not Specified"/>
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jpg"/>
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ault" Image1="2013_02_25 16_25_28 1_R0J208382_1_R7C_T_InspectionOnly.X17.Body_A064933259.
jpg"/>
</Location>
</Image>
</Panel>
</cyber:FLEX_INFO>

```

### 3.5.2.1 Parameters

XML tag	Description	Required	Data Type	Max Length	Not Used
<Username>	Name of the user logged on in SPI.	No	string		
<SystemId>	Name of the computer.	No	string		
<InspectionType>	Type of inspection; At inspection station it is Inspection, at rework station it is Rework.	No	string		
<Panel>	Contains all the inspection results	Yes	Parent tree node		
<PanelPassed>	Inspection Status of Panel; Pass, P, Fail or F. Initial value is "Unreviewed".	Yes	string		
<Category>	Category of the inspection: Defective; False fail; and Gross Disabree. Defective is fail.		string		
<StartTime>	Time inspection started	Yes	string		
<EndTime>	Time inspection ended	No	string		
<Barcode>	Serial number for the individual.	Yes			
<LotCode>	Lot code of the inspection	No	string		
<LotSize>	Size of the inspection lot	No	string		
<SequenceNumber>	Sequence Number of this panel in the lot	No	string		
< NG_Stacker_SlotNumber>		No	string		
<Assembly>	Assembly Name, also	Yes	string		



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	contains board side, e.g. _T (Primary) or _B (Secondary), see chapter 3.2 Naming of test program.				
<b>&lt;PanelResult&gt;</b>	Node contains panel result summary information		Parent tree node		
<b>&lt;Attributes&gt;</b>	Node for internal use.		Parent tree node		
<b>&lt;DefectiveLocations&gt;</b>	Node for internal use.		Parent tree node		
<Value>		No	Integer		
<b>&lt; DefectiveFeatures&gt;</b>	Node for internal use.		Parent tree node		
<Value>		No	Integer		
<b>&lt;FalseFailLocations &gt;</b>	Node for internal use.		Parent tree node		
<Value>		No	Integer		
<b>&lt;FalseFailFailures &gt;</b>	Node for internal use.		Parent tree node		
<Value>		No	Integer		
<b>&lt;Image&gt;</b>	Contains all the inspection results for a specific image		Parent tree node		
<Name>	Name of the board level image inspected	No	string		
<Barcode>	Barcode of the image	No	string		
< ImagePassed >	Inspection result of the image.		string		
< Category >	Inspection result category for the image.		string		
<b>&lt;Location&gt; (multiple)</b>	Contains all the inspection results for a specific location under image level		Parent tree Node		
<Identifier1>	First identifier of location	Yes	string		
< LocationDefective>	Type of location inspection result.				
< Category >	Inspection result category for the location.		string		
<ReworkError>	The defect defined by the rework operator.		string		
<Image1>	Name of the first image.		string		
<b>&lt;LocationResult&gt;</b>	Node contains location result summary information		Parent tree node		
<b>&lt;Attributes&gt;</b>	Node for internal use.		Parent tree node		
<b>&lt;Mounter&gt;</b>	Node for internal use.		Parent tree node		
< Vendor>			string		

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< StationID>	ID of the inspection station.		string		
< FeederNo>			string		
<Feature> (multiple)	Contains all the inspection results for a specific feature under location level		Parent tree Node		
<Identifier>	Identifier of feature.	Yes	string		
<FeatureDefective>	Type of feature inspection result.		string		
<Category>	Inspection result category for the feature.		string		
<ReworkError>	The defect defined by the rework operator.	Yes	string		
<Image1>	Name of the first image.		string		

<Feature><Identifier> specifies the location of the fault. This text is added to the filed *idComment*, e.g. D1600\_Pins.Pin4.

For field *pin position* (a 5 character field) this information is stored according to:

- The first letter in each “.” separated word + digits will be stored.  
Task.Body1 -> TB1  
Pins.Pin4 -> PP4  
Pins.Gap1 -> PG1
- For one word only, the last 5 characters will be stored.  
Body -> Body  
Body1 -> Body1  
Polarity -> arity  
Text -> Text  
Text22 -> ext22

When <Feature>< ReworkError > does not contain a value, a default fault code is used when storing the fault, e.g. NoErrorRead.

Fault code mapping:

CYBEROPTIC NoErrorRead 0