```
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Adopt Response - - - - - -  - - -->
<xsd:element name="AdoptResponse" type="AdoptResponseType"/>

<xsd:complexType name="AdoptResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12DisownRequestHdb.xsd      for HistoryDB Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Disown Request - - - - - -  - - -->
<xsd:element name="DisownRequest" type="DisownRequestType"/>

<xsd:complexType name="DisownRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12DisownResponseHdb.xsd      for HistoryDB Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Disown Response - - - - - -  - - -->
<xsd:element name="DisownResponse" type="DisownResponseType"/>

<xsd:complexType name="DisownResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ListRecordsRequestHdb.xsd   for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   List Records Request - - - - - -  - - -->
<xsd:element name="ListRecordsRequest" type="ListRecordsRequestType"/>

<xsd:complexType name="ListRecordsRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string" maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ListRecordsResponseHdb.xsd   for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   List Records Response - - - - - -  - - -->
<xsd:element name="ListRecordsResponse" type="ListRecordsResponseType"/>

<xsd:complexType name="ListRecordsResponseType">
  <xsd:sequence>
    <xsd:element name="History" type="HistoryType" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ResetRequestHdb.xsd   for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Reset Request - - - - - -  - - -->
<xsd:element name="ResetRequest" type="ResetRequestType"/>
```

```
<xsd:complexType name="ResetRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="DataName" type="xsd:string"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ResetResponseHdb.xsd for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Rest Response - - - - - -  - - -->
<xsd:element name="ResetResponse" type="ResetResponseType"/>

<xsd:complexType name="ResetResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowHistoryRequestHdb.xsd for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show History Request - - - - - -  - - -->
<xsd:element name="ShowHistoryRequest" type="ShowHistoryRequestType"/>

<xsd:complexType name="ShowHistoryRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="Items" type="xsd:string" minOccurs="0" maxOccurs="unbounded"/>>
    <xsd:element name="Restriction" type="xsd:string" minOccurs="0"
maxOccurs="unbounded"/>>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowHistoryResponseHdb.xsd for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
```

```
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show History Response - - - - - -  - - -->
<xsd:element name="ShowHistoryResponse" type="ShowHistoryResponseType"/>

<xsd:complexType name="ShowHistoryResponseType">
  <xsd:sequence>
    <xsd:element name="History" type="HistoryType" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12UpdateRequestHdb.xsd for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update Request - - - - - -  - - -->
<xsd:element name="UpdateRequest" type="UpdateRequestType"/>

<xsd:complexType name="UpdateRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string" maxOccurs="unbounded"/>
    <xsd:element name="History" type="HistoryType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12UpdateResponseHdb.xsd for HistoryDB Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update Response - - - - - -  - - -->
<xsd:element name="UpdateResponse" type="UpdateResponseType"/>

<xsd:complexType name="UpdateResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
```

```
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12AddEventRequestHrd.xsd      for HistoryRecord Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Add Event Request - - - - - -  - - -->
<xsd:element name="AddEventRequest" type="AddEventRequestType"/>

<xsd:complexType name="AddEventRequestType">
  <xsd:sequence>
    <xsd:element name="History" type="HistoryType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12AddEventResponseHrd.xsd      for HistoryRecord Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Add Event Response - - - - - -  - - -->
<xsd:element name="AddEventResponse" type="AddEventResponseType"/>

<xsd:complexType name="AddEventResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12DestructRequestHrd.xsd      for HistoryRecord Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Destruct Request - - - - - - - - - - -->
```

```
<xsd:element name="DestructRequest" type="DestructRequestType"/>

<xsd:complexType name="DestructRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12DestructResponseHrd.xsd      for HistoryRecord Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

!-- - - - - - - - - - Destruct Response - - - - - - - - - - - -->
<xsd:element name="DestructResponse" type="DestructResponseType"/>

<xsd:complexType name="DestructResponseType">
  <xsd:sequence>
    <xsd:element name="State" type="HistoryRecordStateType"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

<!-- - - - - - - $$$   State for HistoryRecord   $$$- - - - -   - - -->
<xsd:simpleType name="HistoryRecordStateType">
  <restriction base="xsd:string">
    <enumeration value="NO STATE"/>
  </restriction>
</xsd:simpleType>

</xsd:schema>


XML Message Schema Name:  T12FluctuateRequestHrd.xsd      for HistoryRecord Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Fluctuate Request - - - - - - - - - - - -->
<xsd:element name="FluctuateRequest" type="FluctuateRequestType"/>

<xsd:complexType name="FluctuateRequestType">
  <xsd:sequence>
    <xsd:element name="Name" type="xsd:string"/>
    <xsd:element name="Value" type="xsd:anyType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12FluctuateResponseHrd.xsd for HistoryRecord Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Fluctuate Response - - - - - - - - - - - -->
<xsd:element name="FluctuateResponse" type="FluctuateResponseType"/>

<xsd:complexType name="FluctuateResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ListEventRequestHrd.xsd for HistoryRecord Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - List Event Request - - - - - - - - - - - -->
<xsd:element name="ListEventRequest" type="ListEventRequestType"/>

<xsd:complexType name="ListEventRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ListEventResponseHrd.xsd for HistoryRecord Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - List Event Response - - - - - - - - - - - -->
<xsd:element name="ListEventResponse" type="ListEventResponseType"/>

<xsd:complexType name="ListEventResponseType">
  <xsd:sequence>
    <xsd:element name="EventCaption" type="EventCaptionType" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
```

```
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowEventRequestHrd.xsd for HistoryRecord Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Show Event Request - - - - - - - - - - -->
<xsd:element name="ShowEventRequest" type="ShowEventRequestType"/>

<xsd:complexType name="ShowEventRequestType">
  <xsd:sequence>
    <xsd:element name="EventId" type="xsd:string"/>     <!-- * -->
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowEventResponseHrd.xsd for HistoryRecord Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Show Event Response - - - - - - - - - - -->
<xsd:element name="ShowEventResponse" type="ShowEventResponseType"/>

<xsd:complexType name="ShowEventResponseType">
  <xsd:sequence>
    <xsd:element name="History" type=" HistoryType"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowHistoryRequestHrd.xsd for HistoryRecord Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>
```

```
<!-- - - - - - - - - - Show History Request - - - - - - - - - - -->
<xsd:element name="ShowHistoryRequest" type="ShowHistoryRequestType"/>

<xsd:complexType name="ShowHistoryRequestType">
  <xsd:sequence>
    <xsd:element name="Items" type="xsd:string" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element name="Restriction" type="xsd:steing" minOccurs="0"
maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowHistoryResponseHrd.xsd for HistoryRecord Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Show History Response - - - - - - - - - - -->
<xsd:element name="ShowHistoryResponse" type="ShowHistoryResponseType"/>

<xsd:complexType name="ShowHistoryResponseType">
  <xsd:sequence>
    <xsd:element name="History" type=" HistoryTypeForHistoryRecord" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ChangeNamespaceRequestIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Change Namespace Request - - - - - -  - - -->
<xsd:element name="ChangeNamespaceRequest" type="ChangeNamespaceRequestType"/>

<xsd:complexType name="ChangeNamespaceRequestType">
  <xsd:sequence>
    <xsd:element name="Group" type="xsd:string"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ChangeNamespaceResponseIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Change Namespace Response - - - - - -  - - -->
<xsd:element name="ChangeNamespeceResponse" type="ChangeNamespeceResponseType"/>

<xsd:complexType name="ChangeNamespaceResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12InstallRequestIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Install Request - - - - - -  - - -->
<xsd:element name="InstallRequest" type="InstallRequestType"/>

<xsd:complexType name="InstallRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="AttachmentName" type="xsd:string"/>
    <xsd:element name="AttachmentType" type="xsd:string"/>
    <xsd:element name="Location" type="xsd:string" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="History" type="HistoryType" minOccurs="0"
maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12InstallResponseIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Install Response - - - - - -  - - -->
<xsd:element name="InstallResponse" type="InstallResponseType"/>
```

```
<xsd:complexType name="InstallResponseType">
  <xsd:sequence>
    <xsd:element name="Handle" type="xsd:string" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ListUpRequestIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   List Up Request - - - - - -  - - -->
<xsd:element name="ListUpRequest" type="ListUpRequestType"/>

<xsd:complexType name="ListUpRequestType">
  <xsd:sequence>
    <xsd:element name="Restriction" type="xsd:string" minOccurs="0"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ListUpResponseIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   List Up Response - - - - - -  - - -->
<xsd:element name="ListUpResponse" type="ListUpResponseType"/>

<xsd:complexType name="ListUpResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType" minOccurs="0"
maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowDataRequestIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
```

```
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Data Request - - - - - -  - - -->
<xsd:element name="ShowDataRequest" type="ShowDataRequestType"/>

<xsd:complexType name="ShowDataRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowDataResponseIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Data Response - - - - - -  - - -->
<xsd:element name="ShowDataResponse" type="ShowDataResponseType"/>

<xsd:complexType name="ShowDataResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentInfo" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowNamespaceRequestIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Namespace Request - - - - - -  - - -->
<xsd:element name="ShowNamespaceRequest" type="ShowNamespaceRequestType"/>

<xsd:complexType name="ShowNamespaceRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowNamespaceResponseIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Namespace Response - - - - - -  - - -->
<xsd:element name="ShowNamespeceResponse" type="ShowNamespeceResponseType"/>

<xsd:complexType name="ShowNamespaceResponseType">
  <xsd:sequence>
    <xsd:element name="Group" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12UninstallRequestIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Uninstall Request - - - - - -  - - -->
<xsd:element name="UninstallRequest" type="UninstallRequestType"/>

<xsd:complexType name="UninstallRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12UninstallResponseIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Uninstall Response - - - - - -  - - -->
<xsd:element name="UninstallResponse" type="UninstallResponseType"/>

<xsd:complexType name="UninstallResponseType">
  <xsd:sequence>
```

```
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12UpdateRequestIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update Request - - - - - -  - - -->
<xsd:element name="UpdateRequest" type="UpdateRequestType"/>

<xsd:complexType name="UpdateRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="Operation" type="OperationType"/>
    <xsd:element name="Location" type="xsd:string" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

<!-- - - - - - - $$$   Operation on Inventory   $$$- - - - -   - - -->
<xsd:simpleType name="OperationType">
  <restriction base="xsd:string">
    <enumeration value="Deploy"/>
    <enumeration value="Forward"/>
    <enumeration value="Release"/>
    <enumeration value="Storage"/>
    <enumeration value="Withdraw"/>
  </restriction>
</xsd:simpleType>

</xsd:schema>
```

XML Message Schema Name: T12UpdateResponseIvt.xsd for Inventory Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update Response - - - - - -  - - -->
<xsd:element name="UpdateResponse" type="UpdateResponseType"/>

<xsd:complexType name="UpdateResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>
```

```
</xsd:schema>
```

XML Message Schema Name: T12ShowAttachmentRequestIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Attachment Request - - - - - -  - - -->
<xsd:element name="ShowAttachmentRequest" type="ShowAttachmentRequestType"/>

<xsd:complexType name="ShowAttachmentRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowAttachmentResponseIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Attachment Response - - - - - -  - - -->
<xsd:element name="ShowAttachmentResponse" type="ShowAttachmentResponseType"/>

<xsd:complexType name="ShowAttachmentResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowHistoryRequestIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Show History Request - - - - - - - - - - -->
<xsd:element name="ShowHistoryRequest" type="ShowHistoryRequestType"/>

<xsd:complexType name="ShowHistoryRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
```

```
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowHistoryResponseIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Show History Response - - - - - - - - - - -->
<xsd:element name="ShowHistoryResponse" type="ShowHistoryResponseType"/>

<xsd:complexType name="ShowHistoryResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="History" type=" HistoryTypeForHistoryRecord" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowIdRequestIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Request - - - - - -  - - -->
<xsd:element name="ShowIdRequest" type="ShowIdRequestType"/>

<xsd:complexType name="ShowIdRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowIdResponseIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Response - - - - - -  - - -->
<xsd:element name="ShowIdResponse" type="ShowIdResponseType"/>
```

```
<xsd:complexType name="ShowIdResponseType">
  <xsd:sequence>
    <xsd:element name="InvoiceId" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowLoadportsRequestIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Loadports Request - - - - - -  - - -->
<xsd:element name="ShowLoadportsRequest" type="ShowLoadportsRequestType"/>

<xsd:complexType name="ShowLoadportsRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowLoadportsResponseIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Loadports Response - - - - - -  - - -->
<xsd:element name="ShowLoadportsResponse" type="ShowLoadportsResponseType"/>

<xsd:complexType name="ShowLoadportsResponseType">
  <xsd:sequence>
    <xsd:element name="LoadortId" type="xsd:string" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowTypeRequestIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">
```

```
<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Type Request - - - - - -  - - -->
<xsd:element name="ShowTypeRequest" type="ShowTypeRequestType"/>

<xsd:complexType name="ShowTypeRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowTypeResponseIvc.xsd for Invoice Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Type Response - - - - - -  - - -->
<xsd:element name="ShowTypeResponse" type="ShowTypeResponseType"/>

<xsd:complexType name="ShowTypeResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentType" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ReceiveInvoiceRequestJim.xsd for JitMachine Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Receive Invoice Request - - - - - -  - - -->
<xsd:element name="ReceiveInvoiceRequest" type=" ReceiveInvoiceRequestType"/>

<xsd:complexType name="ReceiveInvoiceRequestType">
  <xsd:sequence>
    <xsd:element name="InvoiceId" type="xsd:string"/>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="AttachmentType" type="xsd:string"/>
    <xsd:element name="LoadportId" type="xsd:string" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="History" type="HistoryType" minOccurs="1"
maxOccurs="unbounded"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>
```

```
</xsd:schema>


XML Message Schema Name:  T12ReceiveInvoiceResponseJim.xsd      for JitMachine Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Receive Invoice Response - - - - - -  - - -->
<xsd:element name=" ReceiveInvoiceResponse" type=" ReceiveInvoiceResponseType"/>

<xsd:complexType name=" ReceiveInvoiceResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12ShowAttachmentsRequestJim.xsd      for JitMachine Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Attachments Request - - - - - -  - - -->
<xsd:element name="ShowAttachmentsRequest" type="ShowAttachmentsRequestType"/>

<xsd:complexType name="ShowAttachmentsRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12ShowAttachmentsResponseJim.xsd      for JitMachine Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Attachments Response - - - - - -  - - -->
<xsd:element name="ShowAttachmentsResponse" type="ShowAttachmentsResponseType"/>

<xsd:complexType name="ShowAttachmentsResponseType">
  <xsd:sequence>
```

```
    <xsd:element name="AttachmentId" type="xsd:string" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowExceptionsRequestJim.xsd for JitMachine Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Exceptions Request - - - - - -  - - -->
<xsd:element name="ShowExceptionsRequest" type="ShowExceptionsRequestType"/>

<xsd:complexType name="ShowExceptionsRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowExceptionsResponseJim.xsd for JitMachine Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Exceptions Response - - - - - -  - - -->
<xsd:element name="ShowExceptionsResponse" type="ShowExceptionsResponseType"/>

<xsd:complexType name="ShowExceptionsResponseType">
  <xsd:sequence>
    <xsd:element name="ExceptionId" type="xsd:string" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowIdRequestJim.xsd for JitMachine Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
```

```
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Request - - - - - -  - - -->
<xsd:element name="ShowIdRequest" type="ShowIdRequestType"/>

<xsd:complexType name="ShowIdRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12ShowIdResponseJim.xsd      for JitMachine Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Response - - - - - -  - - -->
<xsd:element name="ShowIdResponse" type="ShowIdResponseType"/>

<xsd:complexType name="ShowIdResponseType">
  <xsd:sequence>
    <xsd:element name="MachineId" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12ShowNameRequestJim.xsd      for JitMachine Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Name Request - - - - - -  - - -->
<xsd:element name="ShowNameRequest" type="ShowNameRequestType"/>

<xsd:complexType name="ShowNameRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>


XML Message Schema Name:  T12ShowNameResponseJim.xsd      for JitMachine Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">
```

```
<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Name Response - - - - - -  - - -->
<xsd:element name="ShowNameResponse" type="ShowNameResponseType"/>

<xsd:complexType name="ShowNameResponseType">
  <xsd:sequence>
    <xsd:element name="MachineName" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowTypeRequestJim.xsd   for JitMachine Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Type Request - - - - - -  - - -->
<xsd:element name="ShowTypeRequest" type="ShowTypeRequestType"/>

<xsd:complexType name="ShowTypeRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowTypeResponseJim.xsd   for JitMachine Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Type Response - - - - - -  - - -->
<xsd:element name="ShowTypeResponse" type="ShowTypeResponseType"/>

<xsd:complexType name="ShowTypeResponseType">
  <xsd:sequence>
    <xsd:element name="MachineType" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ChangeNameRequestPlc.xsd   for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Change Name Request - - - - - -  - - -->
<xsd:element name="ChangeNameRequest" type="ChangeNameRequestType"/>

<xsd:complexType name="ChangeNameRequestType">
  <xsd:sequence>
    <xsd:element name="LocationName" type="xsd:string"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ChangeNameResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - -   Change Name Response - - - - - -  - - -->
<xsd:element name="ChangeNameResponse" type="ChangeNameResponseType"/>

<xsd:complexType name="ChangeNameResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowAttachmentsRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Attachments Request - - - - - -  - - -->
<xsd:element name="ShowAttachmentsRequest" type="ShowAttachmentsRequestType"/>

<xsd:complexType name="ShowAttachmentsRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowAttachmentsResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Attachments Response - - - - - -  - - -->
<xsd:element name="ShowAttachmentsResponse" type="ShowAttachmentsResponseType"/>

<xsd:complexType name="ShowAttachmentsResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string" minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowAvailableSpaceRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Available Space Request - - - - - -  - - -->
<xsd:element name="ShowAvailableSpaceRequest" type="ShowAvailableSpaceRequestType"/>

<xsd:complexType name="ShowAvailableSpaceRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowAvailableSpaceResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Available Space Response - - - - - -  - - -->
<xsd:element name="ShowAvailableSpaceResponse" type="ShowAvailableSpaceResponseType"/>
```

```
<xsd:complexType name="ShowAvailableSpaceResponseType">
  <xsd:sequence>
    <xsd:element name="Space" type="xsd:integer"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowCapacityRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Capacity Request - - - - - -  - - -->
<xsd:element name="ShowCapacityRequest" type="ShowCapacityRequestType"/>

<xsd:complexType name="ShowCapacityRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowCapacityResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Capacity Response - - - - - -  - - -->
<xsd:element name="ShowCapacityResponse" type="ShowCapacityResponseType"/>

<xsd:complexType name="ShowCapacityResponseType">
  <xsd:sequence>
    <xsd:element name="Capacity" type="xsd:unsignedInt"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowIdRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">
```

```
<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Request - - - - - -  - - -->
<xsd:element name="ShowIdRequest" type="ShowIdRequestType"/>

<xsd:complexType name="ShowIdRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowIdResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Response - - - - - -  - - -->
<xsd:element name="ShowIdResponse" type="ShowIdResponseType"/>

<xsd:complexType name="ShowIdResponseType">
  <xsd:sequence>
    <xsd:element name="LocationId" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowLocationTypeRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show LocationType Request - - - - - -  - - -->
<xsd:element name="ShowLocationTypeRequest" type="ShowLocationTypeRequestType"/>

<xsd:complexType name="ShowLocationTypeRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowLocationTypeResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
```

```
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Location Type Response - - - - - -  - - -->
<xsd:element name="ShowLocationTypeResponse" type="ShowLocationTypeResponseType"/>

<xsd:complexType name="ShowLocationTypeResponseType">
  <xsd:sequence>
    <xsd:element name="LocationType" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowNameRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Name Request - - - - - -  - - -->
<xsd:element name="ShowNameRequest" type="ShowNameRequestType"/>

<xsd:complexType name="ShowNameRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowNameResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Name Response - - - - - -  - - -->
<xsd:element name="ShowNameResponse" type="ShowNameResponseType"/>

<xsd:complexType name="ShowNameResponseType">
  <xsd:sequence>
    <xsd:element name="LocationName" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowPossibleTypeRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Possible Type Request - - - - - -  - - -->
<xsd:element name="ShowPossibleTypeRequest" type="ShowPossibleTypeRequestType"/>

<xsd:complexType name="ShowPossibleTypeRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowPossibleTypeResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - -   Show Possible Type Response - - - - - -  - - -->
<xsd:element name="ShowPossibleTypeResponse" type="ShowPossibleTypeResponseType"/>

<xsd:complexType name="ShowPossibleTypeResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentType" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowStateRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show State Request - - - - - -  - - -->
<xsd:element name="ShowStateRequest" type="ShowStateRequestType"/>

<xsd:complexType name="ShowStateRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>
```

```
</xsd:schema>


XML Message Schema Name:  T12ShowStateResponsePlc.xsd      for Public Location Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show State Response - - - - - -  - - -->
<xsd:element name="ShowStateResponse" type="ShowStateResponseType"/>

<xsd:complexType name="ShowStateResponseType">
  <xsd:sequence>
    <xsd:element name="State" type="PublicLocationStateType"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

<!-- - - - - - - - -$$$   State for Public Location   $$$- - - - - - -  - - -->
<xsd:simpleType name="PublicLocationStateType">
  <restriction base="xsd:string">
    <enumeration value="FULL"/>
    <enumeration value="VACANT"/>
    <enumeration value="UNOCCUPIED"/>
    <enumeration value="UNKNOWN"/>
  </restriction>
</xsd:simpleType>

</xsd:schema>


XML Message Schema Name:  T12UpdateOccupancyRequestPlc.xsd      for Public Location
Class

<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update Occupancy Request - - - - - -  - - -->
<xsd:element name="UpdateOccupancyRequest" type="UpdateOccupancyRequestType"/>

<xsd:complexType name="UpdateOccupancyRequestType">
  <xsd:sequence>
    <xsd:element name="Occupancy" type="xsd:integer"/>>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12UpdateOccupancyResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update Occupancy Response - - - - - -  - - -->
<xsd:element name="UpdateOccupancyResponse" type="UpdateOccupancyResponseType"/>

<xsd:complexType name="UpdateOccupancyResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12UpdateStateRequestPlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update State Request - - - - - -  - - -->
<xsd:element name="UpdateStateRequest" type="UpdateStateRequestType"/>

<xsd:complexType name="UpdateStateRequestType">
  <xsd:sequence>
    <xsd:element name="State" type="PublicLocationStateType"/>>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

<!-- - - - - - - - -$$$   State for Public Location   $$$- - - - - -  - - -->
<xsd:simpleType name="PublicLocationStateType">
  <restriction base="xsd:string">
    <enumeration value="FULL"/>
    <enumeration value="VACANT"/>
    <enumeration value="UNOCCUPIED"/>
    <enumeration value="UNKNOWN"/>
  </restriction>
</xsd:simpleType>

</xsd:schema>
```

XML Message Schema Name: T12UpdateStateResponsePlc.xsd for Public Location Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">
```

```
<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Update State Response - - - - - -  - - -->
<xsd:element name="UpdateStateResponse" type="UpdateStateResponseType"/>

<xsd:complexType name="UpdateStateResponseType">
  <xsd:sequence>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ChangeNameRequestSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Change Name Request - - - - - -  - - -->
<xsd:element name="ChangeNameRequest" type="ChangeNameRequestType"/>

<xsd:complexType name="ChangeNameRequestType">
  <xsd:sequence>
    <xsd:element name="AttachmentName" type="xsd:string"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ChangeNameResponseSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Change Name Response - - - - - -  - - -->
<xsd:element name="ChangeNameResponse" type="ChangeNameResponseType"/>

<xsd:complexType name="ChangeNameResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentName" type="xsd:string" minOccurs="0" maxOccurs="1"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12DestructRequestSnd.xsd   for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Destruct Request - - - - - - - - - - - -->
<xsd:element name="DestructRequest" type="DestructRequestType"/>

<xsd:complexType name="DestructRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12DestructResponseSnd.xsd   for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - - - - Destruct Response - - - - - - - - - - - -->
<xsd:element name="DestructResponse" type="DestructResponseType"/>

<xsd:complexType name="DestructResponseType">
  <xsd:sequence>
    <xsd:element name="State" type="SecondmentType"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

<!-- - - - - - - - -$$$   State for Secondment   $$$- - - - - -  - - -->
<xsd:simpleType name="SecondmentStateType">
  <restriction base="xsd:string">
    <enumeration value="EFFECTIVE"/>
    <enumeration value="EXPIRED"/>
    <enumeration value="INUSE"/>
    <enumeration value="NOTUSED"/>
    <enumeration value="UNKNOWN"/>
  </restriction>
</xsd:simpleType>

</xsd:schema>
```

XML Message Schema Name: T12ShowIdRequestSnd.xsd   for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">
```

```
<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Request - - - - - -  - - -->
<xsd:element name="ShowIdRequest" type="ShowIdRequestType"/>

<xsd:complexType name="ShowIdRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowIdResponseSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show ID Response - - - - - -  - - -->
<xsd:element name="ShowIdResponse" type="ShowIdResponseType"/>

<xsd:complexType name="ShowIdResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentId" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowNameRequestSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Name Request - - - - - -  - - -->
<xsd:element name="ShowNameRequest" type="ShowNameRequestType"/>

<xsd:complexType name="ShowNameRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowNameResponseSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">
```

```
<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Name Response - - - - - -  - - -->
<xsd:element name="ShowNameResponse" type="ShowNameResponseType"/>

<xsd:complexType name="ShowNameResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentName" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowStateRequestSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show State Request - - - - - -  - - -->
<xsd:element name="ShowStateRequest" type="ShowStateRequestType"/>

<xsd:complexType name="ShowStateRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowStateResponseSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show State Response - - - - - -  - - -->
<xsd:element name="ShowStateResponse" type="ShowStateResponseType"/>

<xsd:complexType name="ShowStateResponseType">
  <xsd:sequence>
    <xsd:element name="State" type="SecondmentStateType" minOccurs="1" maxOccurs="2"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

<!-- - - - - - - - -$$$   State for Secondment   $$$- - - - - -  - - -->
<xsd:simpleType name="SecondmentStateType">
  <restriction base="xsd:string">
    <enumeration value="EFFECTIVE"/>
```

```
    <enumeration value="EXPIRED"/>
    <enumeration value="INUSE"/>
    <enumeration value="NOTUSED"/>
    <enumeration value="UNKNOWN"/>
  </restriction>
</xsd:simpleType>

</xsd:schema>
```

XML Message Schema Name: T12ShowTypeRequestSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Type Request - - - - - -  - - -->
<xsd:element name="ShowTypeRequest" type="ShowTypeRequestType"/>

<xsd:complexType name="ShowTypeRequestType">
  <xsd:atributeGroup ref="RegRequestAttr"/>
</xsd:complexType>

</xsd:schema>
```

XML Message Schema Name: T12ShowTypeResponseSnd.xsd for Secondment Class

```
<xsd:schema xmlns:xsd=http://www.w3.org/2001/XMLSchema
 xmlns:jit=http://www.semi.org/Traceability/T12.2-V01
 targetNamespace=http://www.semi.org/Traceability/T12.2-V01
 elementFormDefault="qualified" attributeFormDefault="qualified">

<xsd:include
 schemaLocation="http://www.semi.org/Traceability/T12.2-V01/CommonDefinitions"/>

<!-- - - - - - - -   Show Type Response - - - - - -  - - -->
<xsd:element name="ShowTypeResponse" type="ShowTypeResponseType"/>

<xsd:complexType name="ShowTypeResponseType">
  <xsd:sequence>
    <xsd:element name="AttachmentType" type="xsd:string"/>
    <xsd:element name="ServiceStatus" type="ServiceStatusType"/>
  </xsd:sequence>
  <xsd:atributeGroup ref="RegResponseAttr"/>
</xsd:complexType>

</xsd:schema>


<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 xmlns:jit="http:// www.semi.org/Traceability/T12.2-V01"
 targetNamespace="http://www.semi.org/Traceability/T12.2-V01"
 elementFormDefault="qualified" attributeFormDefault="qualified">

<!-- ==========##### Global Definitions ################## - - -->
<!-- Event Caption Type - - - - Event Caption Type - - - - Event Caption Type - - -->
<xsd:complexType name="EventCaptionType">
  <xsd:sequence>
```

```
    <xsd:element name="Id" type="xsd:string"/>
    <xsd:element name="Code" type="EventClasstype"/>
    <xsd:element name="TimeStamp" type="xsd:dateTime"/>
  </xsd:sequence>
</xsd:complexType>

<!-- Event Type - - - - - - - Event Type - - - - - - - Event Type - - -->
<xsd:complexType name="EventType">
  <xsd:sequence>
    <xsd:element name="Id" type="xsd:string"/>
    <xsd:element name="EventClass" type="EventClassType"/>
    <xsd:element name="NamedValue" type="NamedValueType" minOccurs="0"
     maxOccurs="unbounded"/>
    <xsd:element name="Machine" type="xsd:string"/>
    <xsd:element name="TimeStamp" type="xsd:dateTime"/>
  </xsd:sequence>
</xsd:complexType>

<!-- Event Class Type - - - - Event Class Type - - - - Event Class Type - - -->
<xsd:simpleType name="EventClassType">
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>

<!-- Event Type - - - - - - - Exception Type - - - - - - - Event Type - - -->
<xsd:complexType name="ExceptionType">
  <xsd:sequence>
    <xsd:element name="Id" type="xsd:string"/>
    <xsd:element name="ExceptionClass" type="ExceptionClassType"/>
    <xsd:element name="ExceptionLevel" type="ExceptionLevelType"/>
    <xsd:element name="Description" type="xsd:string"/>
    <xsd:element name="NamedValue" type="NamedValueType" minOccurs="0"
     maxOccurs="unbounded"/>
    <xsd:element name="Machine" type="xsd:string"/>
    <xsd:element name="TimeStamp" type="xsd:dateTime"/>
  </xsd:sequence>
</xsd:complexType>

<!-- - - - Exception Level Type - - - - - -  Exception Level Type - - - - -->
<xsd:simpleType name="ExceptionLevelType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="NOTIC"/>
    <xsd:enumeration value="WARNING"/>
    <xsd:enumeration value="ALART"/>
  </xsd:restriction>
</xsd:simpleType>

<!-- - - - Exception Class Type - - - - - -  Exception Class Type - - - - -->
<xsd:simpleType name="ExceptionClassType">
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>

<!-- History - - - - -   History - - - - - -  History - - -->
<xsd:complexType name="HistoryType">
  <xsd:sequence>
    <xsd:element name="HistoryIndex" type="HistoryIndexType"/>
    <xsd:complexType>
      <xsd:choice>
        <xsd:element name="Event" type="EventType"/>
        <xsd:element name="Exception" type="ExceptionType"/>
      </xsd:choice>
    </xsd:complexType>
  </xsd:sequence>
</xsd:complexType>
```

```
<xsd:complexType name="HistoryIndexType">
  <xsd:sequence>
    <xsd:element name="Id" type="xsd:string"/>
    <xsd:element name="Type" type="xsd:string"/>
  </xsd:sequence>
</xsd:complexType>

<!-- Genaric Types - - - -  Generic Types - - - -  Generic Types - - -->
<xsd:complexType name="NamedValueType">
  <xsd:sequence>
    <xsd:element name="Name" type="xsd:string"/>
    <xsd:element name="Value" type="xsd:anyType"/>
  </xsd:sequence>
</xsd:complexType>

<!-- Service Status Type - - - - -   Service Status Type - - -->
<xsd:complexType name="ServiceStatusType">
  <xsd:sequence>
    <xsd:element name="SvcAck" type="SvcAcktype"/>
    <xsd:element name="SvcErr" type="SvcErrType" minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="SvcAckTye">
  <xsd:restriction base="xsd:string">
    <enumeration value="Successful"/>
    <enumeration value="Wrong Service"/>
    <enumeration value="Refused"/>
    <enumeration value="Invalid Parameter"/>
    <enumeration value="Has started"/>
    <enumeration value="Unsuccessful"/>
    <enumeration value="Wrong object"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="SvcErrType">
  <xsd:sequence>
    <xsd:element name="SvcErrCode" type="xsd:integer"/>
    <xsd:element name="SvcErrText" type="xsd:string"/>
  </xsd:sequence>
</xsd:complexType>

<!-- Attributes - - - - -   Attributes - - - - - -  Attributes - - -->
<xsd:attributeGroup name="RegRequestAttr">
  <xsd:attribute name="dateTime" type="xsd:dateTime" use="required"/>
  <xsd:attribute name="sessionRef" type="xsd:string" use="required"/>
  <xsd:attribute name="requestId" type="xsd:string" use="required"/>
</xsd:attributeGroup>

<xsd:attributeGroup name="RegResponseAttr">
  <xsd:attribute name="dateTime" type="xsd:dateTime" use="required"/>
  <xsd:attribute name="sessionRef" type="xsd:string" use="required"/>
  <xsd:attribute name="requestRef" type="xsd:string" use="required"/>
  <xsd:attribute name="status" type="RspStatus" use="required"/>
  <xsd:attribute name="authority" type="xsd:string" use="optional"/>
  <xsd:attribute name="linkId" type="xsd:string" use="optional"/>
  <xsd:attribute name="linkCnt" type="xsd:integer" use="optional"/>
  <xsd:attribute name="linkExp" type="xsd:duration" use="optional"/>
</xsd:attributeGroup>

<xsd:simpleType name="RspStatus">
  <xsd:restriction base="xsd:string">
```

```
    <enumeration value="GRANTED"/>
    <enumeration valie="REFUSED"/>
  </xsd:restriction>
</xsd:simpleType>

</xsd:schema>
```

RELATED INFORMATION 1
IPC MESSAGING MECHANISM and STRUCTURE

NOTICE: This related information is not an official part of SEMI T12.2 and was derived from the Japanese Traceability Committee. This related information was approved for publication by full letter ballot on April 30, 2004.

R1-1 HTTP and SOAP Envelope

R1-1.1 The following diagram illustrates HTTP message border and SOAP Envelope structure. SOAP Header contains information of the message and SOAP body just contains SOAP Faults to make sure what happens when something wrong. Intended message service and its parameters are contained in second MIME Block to make it possible to allow mixture of non-XML data.

R1-2 Communication with Message Broker

R1-2.1 The following diagrams show client-server communications with Message Broker.

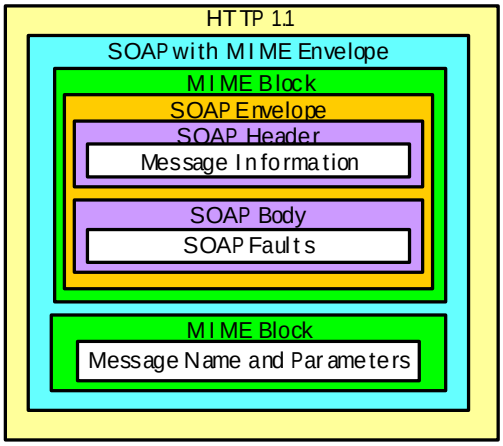

Figure R1-1
SOAP Envelope and MIME Blocks

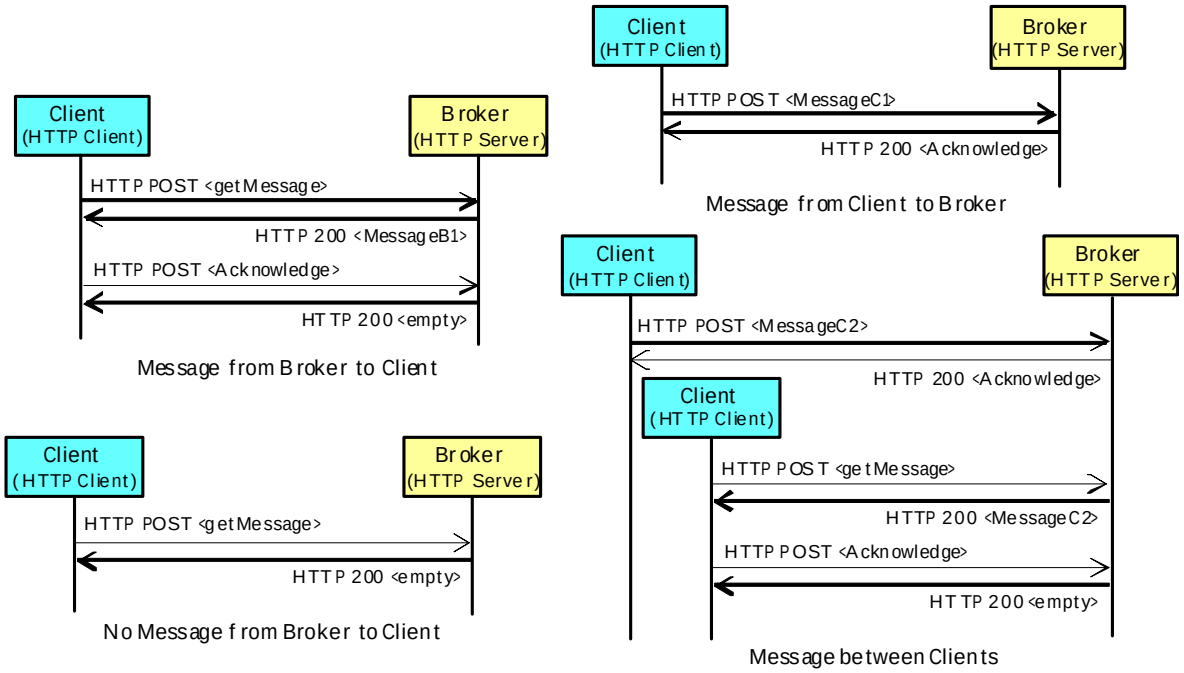

Figure R1-2
Communication with Message Broker

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SEMI T13-1104
SPECIFICATION FOR DEVICE TRACKING: CONCEPTS, BEHAVIOR AND SERVICES

This specification was technically approved by the Global Traceability Committee and is the direct responsibility of the Japanese Traceability Committee. Current edition approved by the Japanese Regional Standards Committee on April 30, 2004. Initially available at www.semi.org June 2004; to be published June 2004.

NOTICE: The designation of SEMI T13 was updated during the 1104 publishing cycle to reflect the creation of SEMI T13.1 and SEMI T13.2.

1 Purpose

1.1 The purpose of this specification is to trace devices for the sake of quality control, warranty, security or any other reasons. This specification makes it easy to transfer information required for realizing tracing in such semiconductor products as dice and packaged devices.

1.2 Because modern market trend of consumer minds, industries and governments are explicitly or implicitly requiring traceability for all products including semiconductor devices. Implementing this specification will help to satisfy both direct and indirect consumers of semiconductor devices.

1.3 The other purpose of this document is to clarify means to define coordinates to specify physical position of devices on substrates which the other standard documents don't address. This information is provided in Appendix sections.

2 Scope

2.1 This specification is intended to realize semiconductor device tracking rather than production itself. Even if some operations or communications for tracing purpose may be related to factory automation or production including measurement and maintenance, they are not in the scope of this specification but references to work within a factory.

2.2 Because the object of this specification is traceability, tracing dice is not bounded on packaging process of semiconductor devices. For example bare dice may be mounted on Print Circuit Board (PCB). This specification describes not only what is required to trace dice in semiconductor manufacturing fab but also what could be shared in PCB assembly lines or set makers.

2.3 This document describes device tracking data transfer between entities in a fab. Some entities may be physical or logical depending on configuration of the fab. Sometimes the transfer is carried out between entities in different companies over such communication media as internet or VPN (Virtual Private Network). While this document describes the transferring interface, it doesn't define security specification or criteria to be used with this specification.

2.4 This document describes tracking semiconductor devices. To make it possible to track final assembled products of semiconductor devices consistently, this document describes such assembled materials. Also, sometimes a semiconductor device may consist of more than one die. To track the smallest unit this document often uses "Die Tracking" or "Die Tracing" rather than "Device Tracking."

NOTICE: This standard does not purport to address safety issues, if any, associated with its use. It is the responsibility of the users of this standard to establish appropriate safety and health practices and determine the applicability of regulatory or other limitations prior to use.

3 Limitations

3.1 While this specification could be effective in such industry as PCB assembly, it is not required to comply with this specification. Semiconductor device producers who implement this specification will find communicating die trace information with later assembly manufacturers easier and more effective if they comply this specification. The reverse is also true.

3.2 Because this specification doesn't talk about security considerations, implementers of this specification are required realizing security data transfer or connection with foreign computers. It is the responsibility of the readers of this document to discuss this issue between users and suppliers.

3.3 This document specifies logical information definitions and related message exchanges required for die trace systems, and assumes that any process or equipment verifies passed material or product by any means. This document doesn't specify how it is done, which ID tags and readers are recommended or where and when it must be done. However target equipment and production systems have to make sure the

verification occurs. Even if some physical identification may be difficult to verify because something is hidden by the other material or no physical identification tag is provided, they have to cover by some means.

3.4 Tracking die coordinate information on substrates is a subset of full device tracking. Readers who have just interested in die coordinate information (narrow Device Tracking) can skip most sections and go straight to Appendix and Related Information sections to implement the specification.

4 Referenced Standards

4.1 *SEMI Standards*

SEMI E130 — Specification for Prober Specific Equipment Model for 300 mm Environment (PSEM300)

SEMI G81 — Specification for Map Data Items

SEMI G84 — Specification for Strip Map Protocol

SEMI G85 — Specification for Map Data Format

SEMI M17 — Guide for Universal Wafer Grid

SEMI M20 — Specification for Establishing a Wafer Coordinate System

SEMI M21 — Specification for Assigning Addresses to Rectangular Elements in a Cartesian Array

4.2 *The Internet Engineering Task Force*[1]

RFC2396 — Uniform Resource Identifiers (URI): Generic Syntax

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

5 Terminology

5.1 *Abbreviations & Acronyms*

5.1.1 *PCB* — Print Circuit Board

5.1.2 *SMT* — Surface Mount Technology

5.1.3 *SMTP* — Simple Mail Transfer Protocol

5.1.4 *SIP* — System In Package

5.2 *Definitions*

5.2.1 *cabinet* — a kind of enclosure for electronics to keep from exposure of electrodes and/or subcomponents, and/or to give some means of human operation.

5.2.2 *cassette* — a kind of container of electronics materials or parts for the purpose of carrying capability, grouping operation, replaceability at inlet/outlet port or similar objectives.

5.2.3 *circuit module* — an implemented electric circuit with active/passive elements in a cell, on a substrate or packaged together.

5.2.4 *device* — a concise representation of a semiconductor device. It must be a semiconductor die regardless whether it is on the way of fabrication or completed, whether it has been diced or not, whether it is installed/mounted on some substrate or not, or whether it is packaged or not. If it is packaged, the whole package is assumed as a device and a device may have more than one dice. In some specific case a device may have some other active or passive elements in the package.

5.2.5 *Device Tracking* — generic term of Die Trace regardless of unit of tracing or category of information. Following narrow sense is also applied in some specific fields. A specific case of tracking especially for geometric coordinates information on holding substrate. Because sometimes this specific type of Device Tracing information is very convenient to such end user industries as the automobile or car parts industries, this is defined separately. This can be realized with limited specification presented in Appendix sections of this specification.

5.2.6 *dicing frame* — a frame with sticky plastic film to mount a semiconductor wafer for dicing.

5.2.7 *die* — a semiconductor product which has electric elements and wiring. Many dice are usually fabricated on a semiconductor substrate at a time which is often referred to as wafer and the substrate is diced for dice before packaging or mounting on some other substrate. Some die may be fabricated on such isolator as thin transparent glass plate. Die is intended as it is just one piece of substrate even if it is packaged with the other dice.

5.2.8 *Die Trace* — acquiring die information for tracing the die and/or processing the information to investigate what happens on the die during manufacturing or to ensure such properties of the die as producer and facilities. The information for such aggregating entities as wafer and PCB may be included depending on the usefulness of the information for tracing because they are produced with the die on them.

5.2.9 *glass plate* — a rectangular thin insulator plate to fabricate one or more electric elements on it. Often the material of this plate is transparent glass for flat panel display, sometimes it may be ceramic for passive electric elements. The purpose of definition of this item is just to introduce one of possible examples to trace and this document doesn't specify details.

1 The Internet Engineering Task Force; www.ietf.org,

5.2.10 *hybrid IC* — a kind of Device which has one or more semiconductor dice and other active/passive elements packaged together.

5.2.11 *reusable container* — a container for electronics parts which is usually used more than once.

5.2.12 *packaged device* — a Device which is not exposed in bared shape on substrate for passivation, physical protection and manipulation purposes. It is often independently packaged by ceramic base or plastic molding with leads. Sometimes it has more than one dice and some separated electric elements packaged in a package.

5.2.13 *strip* — rectangular shaped substrate or flexible tape to mount semiconductor devices. The purpose of use is not only for products but also for carrier or some other purpose used during production of electronics products.

5.2.14 *substrate* — base on which electronics elements, especially semiconductor devices, are fabricated or on which electronics parts are mounted. Examples are silicon wafers, flat panel display glass substrates, lead frames, print circuit boards and so on.

6 Convention

6.1 This section defines the conventions followed by this document.

6.2 *Object Conventions* — This document conforms to the conventions for objects established by SEMI E39, including object diagrams, object terminology, and requirements for standardized objects. Accordingly, notation is based on Unified Modeling Language (UML).

6.2.1 *Formal Name of an Object* — The text capitalizes formal object name references. Similar to the way capitalization is normally used when discussing entities. When describing something in the general (like cities) lower case is used, but when a specific entity is of interest (New York City), then first letters are capitalized.

6.2.2 *Components of Complex Attributes* — The names of object attributes defined in tables are left-justified. The individual elements of complex attributes are right-justified in order of appearance below the complex attribute.

6.3 *State Model Conventions*

6.3.1 This document uses the Harel state chart convention for describing dynamic operation of defined objects. The outline of this convention is described in an attachment of SEMI E30. The official definition of this convention is described in "State charts: A Visual Formalism for Complex Systems"[2].

6.3.2 The Harel convention has not the concept of state models of "creation" and "extinction" for expressing a temporary entity. The "job" described in this document is such an entity, and a copy of the same state model is used for an independent job newly created. In this document, a circle with a black circle inside is used for expressing extinction of an entity. A filled black circle denotes the entry to the state model (the entity creation).

6.3.3 Transition tables are provided in conjunction with the state diagrams to explicitly describe the nature of each state transition. A transition table contains columns for Transition number, Previous State, Trigger, New State, Actions, and Comments. The "trigger" (column 3) for the transition occurs while in the "previous" state. The "actions" (column 5) includes a combination of:

1. Actions taken upon exit of the previous state.
2. Actions taken upon entry of the new state.
3. Actions taken which are most closely associated with the transition.
4. No differentiation is made between these cases.

Num	*Previous State*	*Trigger*	*New State*	*Actions*	*Comments*

6.4 *Service Message Representation* — Services are functions or methods that may be provided by either the equipment or the host. A service message may be either a request message, which always requires a response, or a notification message, that does not require a response.

2 D. Harel, "State charts: A Visual Formalism for Complex Systems", Science of Computer Programming 8, 1987.

6.4.1 *Service Definition*

6.4.1.1 A service definition table defines the specific set of messages for a given service resource, as shown in the following table:

Message Service Name	*Type*	*Description*

6.4.1.2 Type can be either "N" = Notification or "R" = Request & Response.

6.4.1.3 Notification type messages are initiated by the service provider (e.g., the equipment) and the provider does not expect to get a response from the service user. Request messages are initiated by a service user (e.g., the host). Request messages ask for data or an activity from the provider. Request messages expect a specific response message (no presumption on the message content).

6.4.2 *Service Parameter Dictionary*

6.4.2.1 A service parameter dictionary table defines the description, format and its possible value for parameters used by services, as shown in the following table:

Parameter Name	*Description*	*Format: Possible Value*

6.4.2.2 A row is provided in the table for each parameter of a service.

6.4.3 *Service Message Definition*

6.4.3.1 A service message definition table defines the parameters used in a service, as shown in the following table:

Parameter	*Req/Ind*	*Res/Cnf*	*Comment*

6.4.3.2 The columns labeled REQ/IND and RSP/CNF link the parameters to the direction of the message. The message sent by the initiator is called the "Request". The receiver terms this message the "Indication" or the request. The receiver may then send a "Response" which the original sender terms the "Confirmation".

6.4.3.3 The following codes appear in the REQ/IND and RSP/CNF columns and are used in the definition of the parameters (eg., how each parameter is used in each direction):

M	Mandatory Parameter — Must be given a valid value.
C	Conditional Parameter — May be defined in some circumstances and undefined in others. Whether a value is given may be completely optional or may depend on the value of the other parameter.
U	User-Defined Parameter.
-	The parameter is not used.
=	(For response only.) Indicates that the value of this parameter in the response must match that in the primary (if defined).

NOTE 1: Concatenated words are often used for names of class, attribute, service and data. However they are official, sometimes separated words may be preferred in figures and explanatory sentences for readability even they are no differences.

7 General Requirements

7.1 *Identification Means* — Equipment and other computer or software have to have some means to identify entities that appear in this document.

7.2 *Communication Means* — Each entity on equipment and other computer or software has to have some electric communication means to transact.

8 Overview

8.1 *Die Trace Capability* — Economic growth around the world makes it possible to get entered into semiconductor manufacturing business and advanced electronics business which uses semiconductor devices. The number of semiconductor manufacturing countries and/or companies including subsidiaries and branch divisions is growing. Procurement by e-commerce makes it easy to purchase semiconductor devices and electronics parts as application of the devices from emerging companies in wide and distant areas. Suppliers of such devices and parts are required to have device tracking facilities or die tracing capabilities to reduce security risks, perform quality assurance, improve quality engineering and some other purpose depending on products.

8.2 *Wide Area Communication* — Such electronics as cell phones and television sets consist of many semiconductor devices. They are decomposed into circuit boards, display module, operation panel unit and so on. Most of such subcomponents also consist of semiconductor devices. They are supplied by semiconductor manufacturers, set makers or third party suppliers. Tracking semiconductor devices or die tracing does not just happen in semiconductor manufacturing fab. Close communication with assembly works including print circuit board (PCB) suppliers and set makers is expected.

8.3 *Range of Die Tracing* — If traceability expectation were only for confirmation of producer and producing country, this standard would address backend processes and PCB assembly line. Industries around semiconductor manufacturing, e.g. automobile and car electronics industries, anticipate more than secure components. To address that, this document extends the range of specification not only for assembly but also for wafer processes. Some specific process data including metrology and inspection may be included in target data for die tracing.

8.4 *Die Trace Data* — As described above, data traced for a die doesn't come from just one specific process or a piece of equipment. Die information is required to be traced on each key equipment. Otherwise it doesn't make sense, in other words, tracing system doesn't work as a whole. Storage for Die Trace Data may or may not be distributed.

8.5 *Variety of Die Trace Data* — Tracers collect various kinds of data for die tracing. They may be collation information of pick & place history from dicing film to lead frame, electric test information for sorting dice or metrology data on the wafer to which a die belongs. They are just examples of variety of Die Trace Data. Their generic format can not be specified and unified central tracing system may not be realistic.

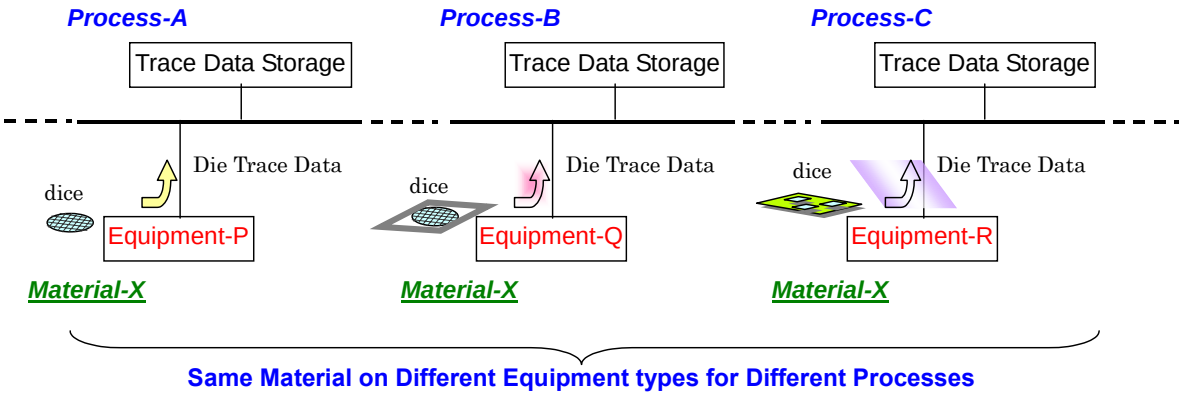

Figure 1
Example of Die Trace Data on Key Equipment

8.6 *Data Source of Die Trace Data* — Most Die Trace Data are reported by equipment because die tracing tracks what happens on a die for process. The things that happen are not for equipment control, process control nor performance tracking done with execution. But they are for logging to certify the pedigree of a product or to track back when some serious problem is detected on a product or prevent further damage to application of the product. In this sense, Die Trace Data may be a part of or summary of MES data, or some calculated data. Equipment may not be the data source in these cases.

8.7 *Data Taxonomy* — Die Trace Data can be categorized in various ways: by data source, data type, data form, semantics and so on. The other classification criteria may be geometric information, deviation of process settings,

metrology data, inspection results, test results, and sorting information. If dice on such substrate as wafer and PCB are processed, all dice share data for the substrate. This case a part of data for a die links to the substrate data. If a group of dice or substrates which is referred to as a lot is processed at a time or in the same environment, die trace data for one of the dice links to the lot.

8.8 *Die Trace System and its Clients* — Die Trace System keeps collecting expected Die Trace Data on Equipment or some other entities in a fab. A Client asks the system to make specific information for die tracing about one or more dice. Client may give some fault information to the system to find out the cause of the fault. When the system discovers a potential problem, it may notify an alert. Die Tracer is a closest entrance to Die Trace System.

8.9 *Tracer and Machine* — To reduce ambiguity or burdensome discussion and to make a process conspicuous, this document highlights die trace data of a process or on a piece of equipment from the ensemble of data. In this aspect data tracking entity, or a snapshot of the system, is referred to as 'Tracer' and entity to execute the process is called as 'Machine' to discriminate from physical equipment.

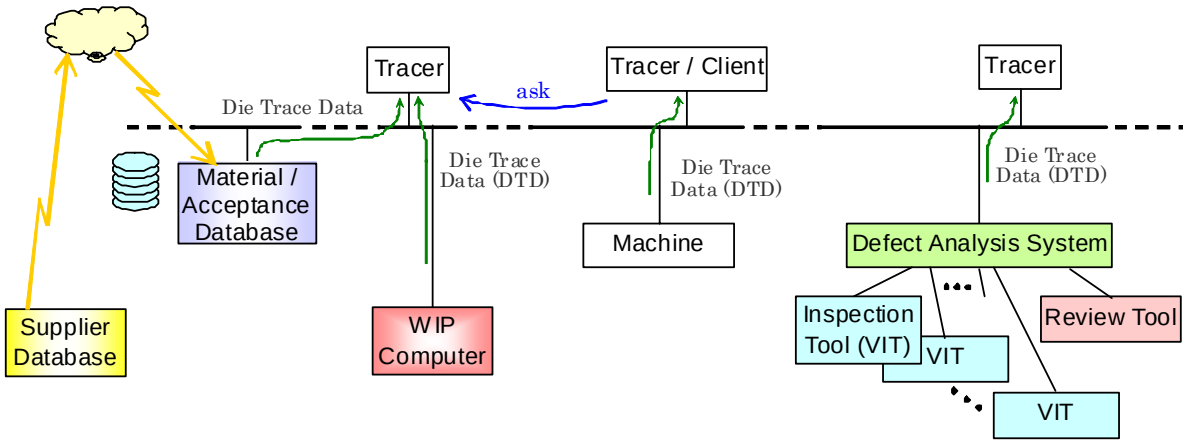

Figure 2
Example of Tracers with/without Machine

9 Basic Concepts

9.1 *Domain Analysis and Object Based Modeling* — To model and design complicated system or to have shared specification of a part of system which is used widely in deferent applications, some sophisticated methodologies are required. Analyzing problem domain by object oriented paradigm is one of the best practices to be taken. Because this technology is frequently used in many SEMI standards, there is no confusion if this document follows the way.

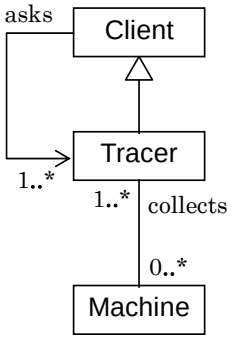

Figure 3
Die Trace Cell Model

9.2 *UML representation* — The diagram above is modeling of Tracing Capability for Dice in UML diagram. It is not required to make systems with object oriented programming language compliant to this specification. Even if UML is typical object oriented representation, object oriented implementation may be expected but may not be mandatory.

9.3 *Ensemble Modeling* — Die tracing can be done at any stage of process. Collected data on such different processes for a specific die are linked together and accumulated as a serialized one Die Trace Data. Because the serialized data is an ensemble of snapshot data of each key process stage. This document models such snapshot of the ensemble as depicted above Figure 1.

9.3.1 *Die Trace Machine Object (Machine)* — This is an instance of Die Trace Machine class (Machine). The Machine acquires Die Trace Data and reports the data to associated Tracer.

9.3.1.1 *Special Machines* — However Die Trace Machines are often physical equipment, they may be sometimes such non-automated entities as human assisted semi-automated manufacturing tools and handcraft processes. Die Trace Machine is any entity to process products or make metrology assistance and have capability to report Due Trace Data on the shop flower of semiconductor device manufacturing. They need to manufacture exactly and input at the terminal by the process or record on work schedule pad for later input in the office.

9.3.2 *Die Tracer Object (Tracer)* — This is an instance of Die Trace class (Tracer). The Tracer collects Die Trace Data reported by Die Trace Machine below. The Tracer searches Die Trace Data as requested by Die Trace Client. Figure 3 is a class model of a cell which consists of a Tracer and its reporting Machines.

9.3.2.1 *Data Searching Chain* — Because the Tracer inherits Client class, the Tracer can ask the other Tracer when it doesn't have enough data to respond a request. Because the Tracer knows very specific type of Tracer, the inquiring chain is usually restarted at the specific Tracer.

9.3.2.2 *Data Source of Tracer* — There are different kinds of data source from the Machine. Sometimes such entities as controlling computers, database systems and their software processes or application programs could be data source of Die Tracer. The controlling computers may be called as Manufacturing Execution System (MES), Work In Process (WIP) computer, Host computer, Cell Controller and so on.

9.3.3 *Die Trace Client Object (Client)* — This is an instance of Die Trace Client class (Client). Basically the Client asks some Die Trace Data set, asks searching Die Trace Data or sets expecting data items to be collected next. At the same time some specific Client may be asked to register concerning phenomena happen on specific product or specific production group, or notify serious problem potentially happens on specific product or production group to possible customers or quality assurance database computer of semiconductor device manufacturer.

9.4 *Die Trace Data Hierarchy and Linkage* — As described very briefly in Section 8.7 Data Taxonomy, whole substrate trace data may complement die trace data on the substrate. They should be linked by some means to keep the relation. Possible data hierarchy is as below.

9.4.1 *Die Trace Data (DTD)*— This is a generic class of any kind of Die Trace Data. This class represents basic concept and primitive nature of data acquired for Die Tracing. Any objects instanced for this class or its derived class have following responsibility.

9.4.1.1 *Die Trace Data Class Definition* — Die Trace Data must have such attribute as ID, Type and etc. as depicted on Figure 4. These attributes cannot be changed because they are proper for a specific object. Because this document doesn't intend these attributes to be accessed directly but just for reference to specify services to access or make use of these attributes. This class is used to discuss and handle generic issues of any subclasses.

9.4.1.1.1 *Target Material* — Die Trace Data need to specify intended material. Die Trace Data must have an attribute for the purpose and it shall provide a service to identify the target material.

9.4.1.1.2 *Data Representation* — Actual Data may be contained in its object as an attribute if amount of data is relatively small. However it may be stored in such independent entity as files or database and referenced with an attribute of this class if the data is relatively large and the attribute for data value must be null. This case it is suggested to take care of the separated data value not to be removed. Storage system often may not notify or ask when related data is removed. It may be better to have another copy of the important data somewhere in Die Tracing System. It is recommended to use any Universal Resource Identifier (URI) for data value reference to access without confusion.

9.4.1.2 *Responsibility of Die Trace Data* — Because Die Trace Data class is to be data container or data label, responsibility of this class is to play the role.

9.4.1.3 *Services of Die Trace Data* — To complete the responsibility, this class provides following services.

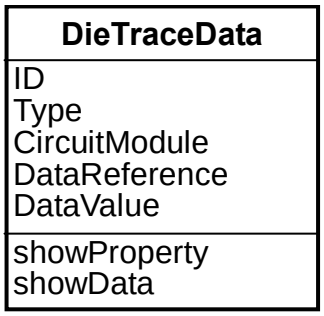

Figure 4
Die Trace Data Class

9.4.1.3.1 *showProperty* — This service returns all or a part of attributes of this object except actual Die Trace Data value.

9.4.1.3.2 *showData* — This service returns actual Die Trace Data value regardless whether it is contained in this object or separated entity.

9.4.1.4 *Behavior of Die Trace Data* — Behavior is defined to complete responsibility of the Die Trace Data. The behavior is often specified through collaboration with outside of this class and state model. Because this class has services to access internal attributes including referenced data value, it defines no collaboration. Also this class defines no state model for it is stateless.

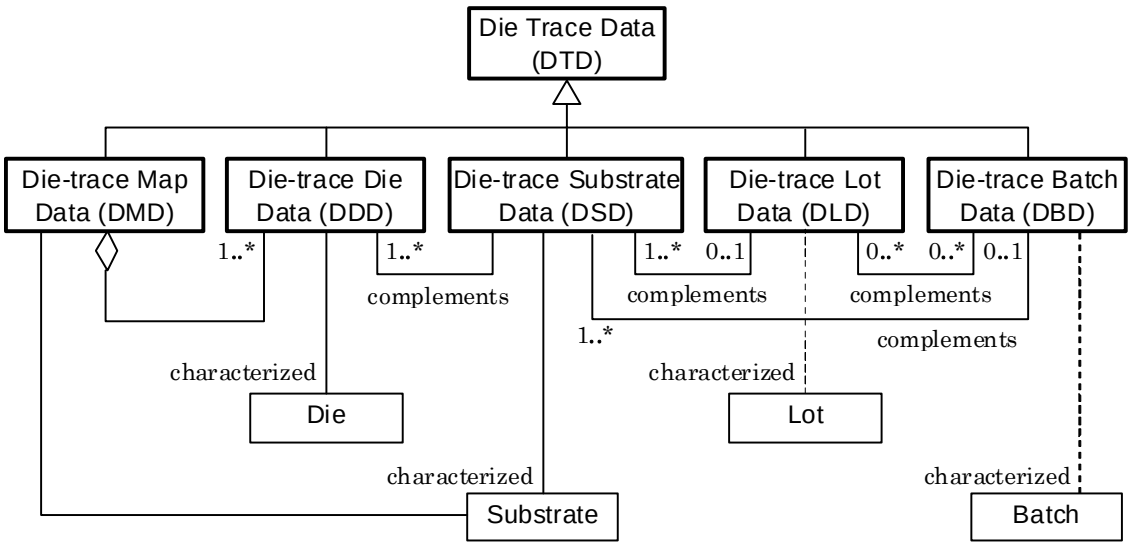

Figure 5
Die Trace Data Hierarchy, Associations and Linkages

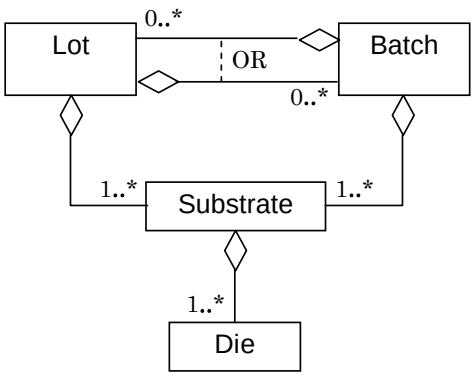

Figure 6
Lot vs. Batch

9.4.2 *Die-trace Die Data (DDD)* — This is Die Trace Data for a die on a certain process. Examples of the data are electric test classification information often referred to as BIN code and wire bonding inspection data for a die.

9.4.3 *Die-trace Map Data (DMD)* — Die-trace Die Data are often grouped together on the process which is executed on a mother substrate. The grouped data is referred to as a map and is usually two-dimensional array or matrix. Examples are probing test data and die ID map of mounting/inserting data on PCB or lead frame strip.

9.4.4 *Die-trace Substrate Data (DSD)* — This Die Trace Data is specific for a substrate on a certain process. Examples of the substrate are wafer, glass plate for flat panel display, such strip as PCB and so on. This data has no special distribution on the substrate or may have some distribution but may not be a Die-trace Map Data. Sometimes this data has very strong correlation with most Die-trace Die Data on the substrate when, for example, this data shows remarkable deviation from normal process result. So the Die-trace Die Data need to keep linkage with this data for complement.

9.4.5 *Die-trace Lot Data (DLD)* — This Die Trace Data is specific for a lot on a certain process. Lot is a group of material or products for the sake of expedient to produce a specific product. A unit of a lot may be different on each process or product. The lot here doesn't include group just for delivery. Because of similar linkage as Die-trace Substrate Data, the data need to keep linkage with this data for complement.

9.4.6 *Die-trace Batch Data (DBD)* — This Die Trace Data is specific for a batch on a certain process. Batch is a group of material or products for the sake of expedient to execute a process. A unit of a batch may be different on each process or equipment. Because of similar linkage as Die-trace Substrate Data, the data need to keep linkage with this data for complement.

9.4.7 *Lot versus Batch* — Because lot and batch are both a group of material or products, their unit sizes are alternative. However sometimes the unit of a lot may be smaller than that of a batch on a process, the relation may be opposite on the other process for the same product, as illustrated on Figure 6. Lot is more related to production plan, production strategy or sprit/merge operation. While, batch is close to process or equipment type, configuration and structure.

9.5 *Physical Substrate Model* — Because die tracing may need to be started from very early manufacturing process and completed at the such final product as cell phone and Television set, there are many different types of substrates appears as objects of tracing: e.g. wafer, die and PCB. While their appearances are fairly different, some characteristics are common. It is convenient to separate the common nature as a base class object, as illustrated on Figure 7. Also the class diagram shows which will be physical tracing target and helps understanding which target make which Die Trace Data. This diagram gives just taxonomy of die trace target substrate in a sense.

9.5.1 *Circuit Module* — This class represents any modular electric circuit and is the common part of any substrate appears as an object of die tracing. Each Circuit Module in die tracing world has corresponding Die Trace Data. The Die Trace Data may link to the other subtype of Die Trace Data: e.g. as aggregation or complement. Circuit Module may have smaller grain Circuit Modules on it as components. For example, such a strip as PCB or linked lead frames has dice. This class has subclasses: Die and Mother Substrate.

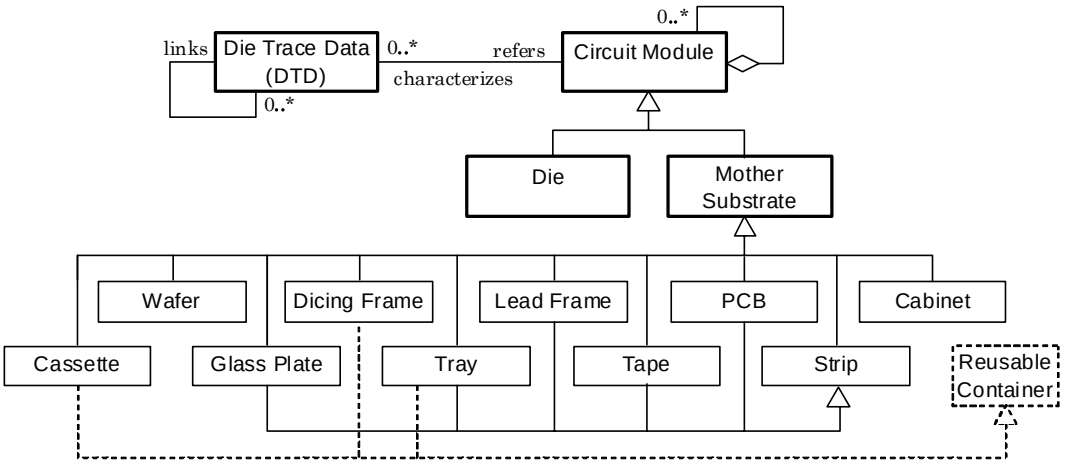

Figure 7
Physical Substrate Model for Die Tracing

9.5.1.1 *Circuit Module Class Definition* — Circuit Module has such attribute as ID, Type and etc. as depicted on Figure 8. These attributes cannot be changed because they are proper for a specific Circuit Module and not all attributes are illustrated on the figure. Because this document doesn't intend these attributes to be accessed directly but just for reference to specify services to access or make use of these attributes. This class is used to discuss and handle generic issues of any subclasses.

9.5.1.2 *Responsibility of Circuit Module* — Because Circuit Module class is to be material label or material property sheet, responsibility of this class is to play the role.

9.5.1.3 *Services of Circuit Module* — To complete the responsibility, this class provides the following services.

9.5.1.3.1 *showProperty* — This service returns all or a part of attributes of this object.

CircuitModule
ID Type ProductName Manufacturer Plant Location ProductionStage LatestProcessTime Lot … … ..
showProperty showDaughter

Figure 8
Circuit Module Class

9.5.1.3.2 *showDaughter* — This service is to get smaller grain Circuit Modules which this Circuit Module has on it.

9.5.1.4 *Behavior of Circuit Module* — Behavior is defined to complete responsibility of the Circuit Module. The behavior is often specified through collaboration with outside of this class and state model. Because this class has services to access internal attributes, it defines no collaboration. Also this class defines no state model for it is stateless.

9.5.2 *Die* — This class represents a semiconductor die fabricated on wafer. It doesn't matter how it appears: on the way of fabrication on a wafer, diced and mounted on some substrate or it is packaged. As long as it is fabricated through semiconductor process or equivalent process, it must be a die regardless of base material. Die doesn't aggregate the other Circuit Modules and it is not aggregated by the other Die. In these senses, dice for gallium arsenide devices, linear image sensors and flat panel display (FPD) devices are examples of the die.

9.5.2.1 *Die Class Definition* — Die inherits Circuit Module. Class definition of the Die is almost same as one for Circuit Module except it may not have a service showDaughter. Even if the service is implemented, it returns error or no daughter Circuit Modules.

9.5.3 *Mother Substrate* — This class is a Circuit Module which may consist of one or more the other Circuit Modules. Silicon wafers, lead flames, IC trays and print circuit boards (PCBs) are examples of Mother Substrate. Because it is a derived class of Circuit Module to exclude the Die class, it must be the Mother Substrate as long as it is used for the purpose, even if it