```
/*   ESDT Descriptor Template Version Number: B0-VER2.2 (30 Sept 1998)  */
/*                                                                      */
/*                                                                      */
/*   The template below is NOT an example B.0 Descriptor File!!!!!!     */
/*                                                                      */
/*  Rather, this file is a template of the structures to be used in     */
/*  describing an Earth Science Data Type (ESDT) following the ECS      */
/*  Release B.0 Science Data Model, as defined in the document "Release */
/*  B Science Data Processing Segment (SDPS) Database Design and        */
/*  Database Schema Specifications for the ECS Project" (May 1996)      */
/*  [311-CD-008-001], referred to as DID311, and as modified in "B.0    */
/*  Implementation Earth Science Data Model" (May 1997) [420-TP-015-001]*/
/*                                                                      */
/*  This template also includes a few structures needed for non-science,*/
/*  system collections.  These are identified in the comments.          */
/*                                                                      */
/*                                                                      */
/*  Modifications:                                                      */
/*     24 November 1997   For VersionID in both the COLLECTIONMETADATA  */
/*                        and INVENTORYMETADATA groups, removed the     */
/*                        quotation marks (i.e., value is then set as an*/
/*                        int), and add "(in the range 0-255)" to the   */
/*                        comment.                                      */
/*                                                                      */
/*                        For VersionID in the INVENTORYMETADATA group, */
/*                        the TYPE is changed from STRING to INTEGER    */
/*                                                                      */
/*                        For VersionID in the CollectionAssociation    */
/*                        group, removed the quotation marks            */
/*                                                                      */
/*                        Added object description for                  */
/*                        VersionDescription to the ECSCollection group */
/*                        of the COLLECTIONMETADATA group.              */
/*                                                                      */
/*                        Replaced the ParameterRange object with       */
/*                        ParameterRangeBegin and ParameterRangeEnd.    */
/*                                                                      */
/*                        Replaced the placeholder in the SERVICES group*/
/*                        for the Acquire Signature with that recently  */
/*                        supplied by DSS.                              */
/*                                                                      */
/*      8 December 1997   Change version number of the descriptor file  */
```

```
/*                          template to 1_9                                 */
/*                                                                          */
/*                          Added CHECK_ORDER = FALSE to the Acquire        */
/*                          This is set TRUE if user to be billed           */
/*                                                                          */
/*                          Corrected the name of OrbitalParametersPointer*/
/*                          to OrbitParametersPointer                       */
/*                                                                          */
/*                          Added "type" object to the collection metadata*/
/*                          for use with some system ESDTs                  */
/*                                                                          */
/*                          Removed from the comments the BNF, since        */
/*                          including it in the template was causing        */
/*                          confusion for some people                       */
/*                                                                          */
/*     12 February 1998     Change version number of the descriptor file    */
/*                          template to 2_0                                 */
/*                                                                          */
/*                          Added "DLL" object to the collection metadata   */
/*                          for identifying the specific DLL shared object*/
/*                          to be used with the ESDT                        */
/*                                                                          */
/*     21 August 1998       Added VerticalSpatialDomain group, which        */
/*                          contains the VerticalSpatialDomainType and      */
/*                          VerticalSpatialDomainValue attributes, to the   */
/*                          collection metadata                             */
/*                                                                          */
/*                          Added SpatialSearchType attribute to the        */
/*                          collection metadata                             */
/*                                                                          */
/*                          Changed version number of the descriptor file   */
/*                          template to 2.1                                 */
/*                                                                          */
/*     30 September 1998    Added optional DeleteFromArchive service to     */
/*                          service section ODL                             */
/*                                                                          */
/*                          Changed version number of the descriptor file   */
/*                          template to 2.2                                 */
/*                                                                          */
/*                                                                          */
/*                                                                          */
/*  The classes and attributes of the B.0 Science Data Model are            */
```

```
/*  expressed below in Object Description Language (ODL) notation.      */
/*  Documentation on ODL is available from URL                          */
/*     http://pds.jpl.nasa.gov/stdref/chap12.htm                        */
/*                                                                      */
/*                                                                      */
/*  In generating the ODL syntax below, a representation of the B.0     */
/*  Science Data Model in the Backus-Naur Format (BNF) was employed.    */
/*  The rules used in the conversion from the BNF to ODL are:           */
/*                                                                      */
/*    1)  Group Names are taken from the Class Names employed in the    */
/*        B.0 Science Data Model.                                       */
/*    2)  Object Names are taken from the Attribute Names employed in   */
/*        the B.0 Science Data Model.                                   */
/*    3)  Multiples of single attributes employ one-dimensional arrays, */
/*        with the size indicated by NUM_VAL in the object description. */
/*           For objects in the COLLECTIONMETADATA group, NUM_VAL must  */
/*               be set to the actual number of values provided.        */
/*           For objects in the INVENTORYMETADATA group, NUM_VAL must   */
/*               be set to the maximum number of values expected.       */
/*    4)  If an object description is for an array, the array values    */
/*        are comma delimited and parentheses enclose the group of      */
/*        values, e.g.,     VALUE = (xxxx,yyyy,zzzz)                    */
/*    5)  Where a group of attributes can be multiple, these are        */
/*        represented inside a "Container" object, with the Container   */
/*        and each group or individual object nested within indicating  */
/*        the ordinal number of the container by using Class = n (where */
/*        n is the container ordinal number) as the first line          */
/*        in the GROUP definition or the individual object definition.  */
/*        Objects within groups within the Container Object do not have */
/*        the Class = n line in their definition, as this is inherited  */
/*        from the GROUP.                                               */
/*    6)  The Container object name is derived by concatenating the     */
/*        string "Container" to the end of the Class Name, except       */
/*        where the Class Name already has "Container" at its end.      */
/*    7)  The Data_Location for Container objects is set to NONE.  This */
/*        is because the containers themselves are not classes or       */
/*        attributes, but objects which just hold classes and           */
/*        attributes which are related to one another.                  */
/*    8)  In the COLLECTIONMETADATA group, all pointer attributes have  */
/*        been excluded; viz., Browse, QualityTextComment,              */
/*        ValidationDocument and UserCommentDocument. These values are  */
/*        not known at the time that the ESDT is installed in a data    */
```

```
/*        server, but must be associated with the ESDT later when the   */
/*        browse, comments or documents are later inserted into the     */
/*        data server.                                                   */
/*    9)  In the INVENTORYMETADATA group, only those pointer attributes */
/*        that are set by the Science Software have been included; viz.,*/
/*        InputPointer, AncillaryInputPointer and OrbitParametersPointer*/
/*        Only these pointers are known at the time that a data granule */
/*        produced by a PGE is installed in a data server, but must be  */
/*        associated with the ESDT later when the browse, comments or   */
/*        documents are inserted.                                       */
/*   10)  The <TYPE =  > statement (without the brackets) appears only  */
/*        for objects defined in the INVENTORYMETADATA group because    */
/*        this group is used as the basis for generating the            */
/*        INVENTORYMETADATA group in the Metadata Configuration File    */
/*        (MCF) used by the SDP toolkit.  The toolkit needs information */
/*        about the data type of the attribute, but the toolkit usage   */
/*        may require a different type than is recorded in data server  */
/*        tables (e.g., "float" to the data server, but "DOUBLE" to the */
/*        metadata tools in the SDP Toolkit.)                           */
/*   11)  For each object description below where Mandatory = "TRUE"    */
/*        has been set, the attribute value(s) that appear in an actual */
/*        Descriptor file will be checked during installation to the    */
/*        data server against the established rule (if any) for that    */
/*        attribute. The "Mandatory" that appears in this template is   */
/*        associated with the checking of attribute values against      */
/*        match rules (i.e. valids lists) and should not be confused    */
/*        with the guidelines in DID 311 concerning which attributes    */
/*        need to be supplied for various levels of metadata coverage.  */
/*   12)  Several attributes in the INVENTORYMETADATA group below have  */
/*        Mandatory = "FALSE" set.  These attributes are not set by the */
/*        science software, but are set after the science software      */
/*        finishes execution.  Setting Mandatory = "FALSE" for these    */
/*        attributes is necessary in order to support proper SDP TK/MCF */
/*        functionality for these attributes.                           */
/*   13)  In the INVENTORYMETADATA group below, only ShortName and      */
/*        VersionID have Data_Location set to MCF.  This is because the */
/*        presence of a value field would not permit other values to be */
/*        set by a PGE and the data granule to be subsequently inserted */
/*        into the data server                                          */
/*   14)  The order of the elements in an object description is not     */
/*        important.                                                    */
/*                                                                      */
```

```
/*                                                                  */
/*  The Descriptor File Groups defined in this template are:        */
/*                                                                  */
/*      METADATA    Collection-level Metadata attributes and values */
/*                  in the COLLECTIONMETADATA group, and the        */
/*                  Granule-level Metadata attributes in the        */
/*                  INVENTORYMETADATA group (which was fomerly referred */
/*                  to as the GRANULEMETADATA group)                */
/*                                                                  */
/*      SERVICE     Lists services available for the ESDT           */
/*                                                                  */
/*      STRUCTURE   Describes the structure of the data granules    */
/*                     that members of the ESDT                     */
/*                                                                  */
/*      EVENT       Events to be generated by actions which involve */
/*                     the ESDT, such as the Insert of a new data   */
/*                     granule, update of metadata, etc.            */
/*                                                                  */
/*                                                                  */
/*   Other Notes:                                                   */
/*                                                                  */
/*   a)  Some of the classes in the B.0 Data Model are mutually     */
/*       exclusive (e.g., RangeDateTime vs SingleDateTime), i.e., an */
/*       actual Descriptor file would employ one or the other but not */
/*       both.                                                      */
/*   b)  Not all classes in the data model apply to all collections. */
/*       For example, the classes and attributes of the             */
/*       HorizontalCoordinateSystemContainer would not apply to     */
/*       scattered vertical profiles of trace gas concentrations (such */
/*       as those from SAGE III).                                   */
/*   c)  Some attributes may be repeated as necessary.  These are   */
/*       indicated by NUM_VAL = n within the object description, where */
/*       n is the number of values provided (collection) or the maximum */
/*       number of values to be set (granule).                      */
/*   d)  Some groups of attributes may be repeated as necessary.  These */
/*       are indicated by Class = "M" within the attribute object   */
/*       description, where M is the ordinal number of the Container. */
/*                                                                  */
/*                                                                  */
/*                                                                  */
GROUP = METADATA
```

```
    GROUP = COLLECTIONMETADATA
        GROUPTYPE = MASTERGROUP

/*                                                                  */
/*  The "type" object is not used in science ESDTs, but is needed to  */
/*  identify the type for some system esdts.  */
        OBJECT = type
            Data_Location = "MCF"
            Mandatory  = "TRUE"
            NUM_VAL = 1
            Value = "xx"   /* Replace xx with the type code (e.g., BR)  */
        END_OBJECT = type

/*  The DLL object is used to identify the specific DLL to be used with */
/*  the ESDT                                                          */

        OBJECT = DLLName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            Value = "xx"   /* Replace xx file name of DLL shared object */
        END_OBJECT = DLLName

/*  The SpatialSearchType attribute is used to identify those ESDTs     */
/*  which are eligible for orbit-based spatial searches                 */

        OBJECT = SpatialSearchType
            Data_Location = "MCF"
            Mandatory = "TRUE"
            NUM_VAL = 1
            Value = "xx"  /* Replace xx with type of spatial search,    */
                          /* currently only "Orbit" is used             */
        END_OBJECT = SpatialSearchType

/*                                                                  */
/*  The Collection-level attributes in this group follow as closely as  */
/*  possible to the B.0 Science Data Model as of 28 February 1997 with  */
/*  the following exceptions:                                         */
/*                                                                    */
/*                                                                    */
/*  1)  The Document Modules has not been included since Documents are  */
/*       handled by the Document Data  Server (not the Science Data     */
```

```
/*       Server)                                                          */
/*  2)  Delivered Algorithm Package attributes (if any/if applicable)    */
/*      are populated separately following successful Science Software   */
/*      Integration and Test (SSI&T).  The ESDT, however, must be        */
/*      installed on the Science Data Server before the Science Software*/
/*      can be integrated with ECS and tested.                           */
/*                                                                       */

/* CollectionDescriptionClass*/
        GROUP = CollectionDescriptionClass
            OBJECT = ShortName
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual ShortName for xxxx */
                Value = "xxxx"
            END_OBJECT = ShortName

            OBJECT = LongName
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual LongName for xxxx */
                Value = "xxxx"
            END_OBJECT = LongName

            OBJECT = CollectionDescription
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual CollectionDescription for xxxx */
                Value = "xxxx"
            END_OBJECT = CollectionDescription

            OBJECT = VersionID
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual VersionID (in the range 0-255 ) for xxxx */
                Value = xxxx
            END_OBJECT = VersionID
        END_GROUP = CollectionDescriptionClass
```

```
/* ECSCollection*/
        GROUP = ECSCollection
            OBJECT = RevisionDate
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual RevisionDate for xxxx */
                Value = "xxxx"
            END_OBJECT = RevisionDate

            OBJECT = SuggestedUsage
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual SuggestedUsage for xxxx */
                Value = "xxxx"
            END_OBJECT = SuggestedUsage

            OBJECT = ProcessingCenter
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual ProcessingCenter for xxxx */
                Value = "xxxx"
            END_OBJECT = ProcessingCenter

            OBJECT = ArchiveCenter
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual ArchiveCenter for xxxx */
                Value = "xxxx"
            END_OBJECT = ArchiveCenter

            OBJECT = VersionDescription
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual VersionDescription for xxxx */
                Value = "xxxx"
            END_OBJECT = VersionDescription
```

```
        END_GROUP = ECSCollection

/* SingleTypeCollection*/
        GROUP = SingleTypeCollection
            OBJECT = CitationforExternalPublication
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual CitationforExternalPublication for xxxx */
                Value = "xxxx"
            END_OBJECT = CitationforExternalPublication

            OBJECT = CollectionState
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual CollectionState for xxxx */
                Value = "xxxx"
            END_OBJECT = CollectionState

            OBJECT = MaintenanceandUpdateFrequency
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual MaintenanceandUpdateFrequency for xxxx */
                Value = "xxxx"
            END_OBJECT = MaintenanceandUpdateFrequency

            OBJECT = AccessConstraints
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual AccessConstraints for xxxx */
                Value = "xxxx"
            END_OBJECT = AccessConstraints
        END_GROUP = SingleTypeCollection

/* Spatial*/
        GROUP = Spatial
            OBJECT = SpatialCoverageType
                Data_Location = "MCF"
                Mandatory = "TRUE"
```

```
                NUM_VAL = 1
                /* Substitute actual SpatialCoverageType for xxxx */
                Value = "xxxx"
            END_OBJECT = SpatialCoverageType

/* SpatialDomainContainer*/
            GROUP = SpatialDomainContainer
                GROUP = VerticalSpatialDomain
                    OBJECT = VerticalSpatialDomainContainer

                        Data_Location = "NONE"
                        Mandatory = "TRUE"
                        Class = "M"

                        OBJECT = VerticalSpatialDomainType
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            Class = "M"
                            NUM_VAL = 1
                            /* Substitute actual VerticalSpatialDomainType for "xxxx" */
                            Value = "xxxx"
                        END_OBJECT = VerticalSpatialDomainType

                        OBJECT = VerticalSpatialDomainValue
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            Class = "M"
                            NUM_VAL = 1
                            /* Substitute actual VerticalSpatialDomainValue for "xxxx" */
                            Value = "xxxx"
                        END_OBJECT = VerticalSpatialDomainValue
                    END_OBJECT = VerticalSpatialDomainContainer
                END_GROUP = VerticalSpatialDomain

                GROUP = HorizontalSpatialDomainContainer

/* ZoneIdentifierClass*/
                    GROUP = ZoneIdentifierClass
                        OBJECT = ZoneIdentifier
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
```

```
                        /* Substitute actual ZoneIdentifier for "xxxx" */
                        Value = "xxxx"
                    END_OBJECT = ZoneIdentifier
                END_GROUP = ZoneIdentifierClass

    /*  Note: One (and only one) of the following types of attribute */
    /*  classes must be present in an ESDT Descriptor:               */
    /*                                                               */
    /*   GPolygonContainer or BoundingRectangle or Point or Circle   */
    /*                                                               */

/* GPolygonContainer*/
                GROUP = GPolygon
                    OBJECT = GPolygonContainer

                        /*  A separate container must be used for each set   */
                        /*  of attribute values. Replace M with the ordinal  */
                        /*  number of the GPolygonContainer.                 */
                        Data_Location = "NONE"
                        Mandatory = "TRUE"
                        Class = "M"

                        GROUP = GRing

                            /* Substitute ordinal number of the  */
                            /* GPolygonContainer for M */
                            Class = "M"

                            OBJECT = ExclusionGRingFlag
                                Data_Location = "MCF"
                                Mandatory = "TRUE"
                                NUM_VAL = 1
                                /* Substitute actual ExclusionGRingFlag for "xxxx" */
                                Value = "xxxx"
                            END_OBJECT = ExclusionGRingFlag

                        END_GROUP = GRing

                        /* A GPolygon must consist of at least 3 points! */
                        GROUP = GRingPoint

                            /* Substitute ordinal number of the  */
```

```
                                /* GPolygonContainer for M */
                                Class = "M"

                                OBJECT = GRingPointLatitude
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    /* Substitute the actual number of */
                                    /* GRingPointLatitude values for n */
                                    NUM_VAL = n
                                    /* Substitute the actual GRingPointLatitude */
                                    /* values for xx.xx, yy.yy, etc. */
                                    Value = (xx.xx,yy.yy,zz.zz)
                                END_OBJECT = GRingPointLatitude

                                OBJECT = GRingPointLongitude
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    /* Substitute the actual number of */
                                    /* GRingPointLongitude values for n */
                                    NUM_VAL = n
                                    /* Substitute the actual GRingPointLongitude */
                                    /* values for xx.xx, yy.yy, etc. */
                                    Value = (xx.xx,yy.yy,zz.zz)
                                END_OBJECT = GRingPointLongitude

                                OBJECT = GRingPointSequenceNo
                                     Data_Location = "MCF"
                                     Mandatory = "TRUE"
                                     /* Substitute the actual number of */
                                     /* GRingPointSequenceNo for n */
                                     NUM_VAL = n
                                     /* Substitute the actual GRingPointSequenceNo */
                                     /* values for xxxx, yyyy, etc. */
                                     Value = (xxxx,yyyy,zzzz)
                                END_OBJECT = GRingPointSequenceNo

                            END_GROUP = GRingPoint

                        END_OBJECT = GPolygonContainer
                    END_GROUP = GPolygon

/* BoundingRectangle*/
```

```
                    GROUP = BoundingRectangle
                        OBJECT = WestBoundingCoordinate
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual WestBoundingCoordinate for xxxx */
                            Value = xxxx
                        END_OBJECT = WestBoundingCoordinate

                        OBJECT = NorthBoundingCoordinate
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual NorthBoundingCoordinate for xxxx */
                            Value = xxxx
                        END_OBJECT = NorthBoundingCoordinate

                        OBJECT = EastBoundingCoordinate
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual EastBoundingCoordinate for xxxx */
                            Value = xxxx
                        END_OBJECT = EastBoundingCoordinate

                        OBJECT = SouthBoundingCoordinate
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual SouthBoundingCoordinate for xxxx */
                            Value = xxxx
                        END_OBJECT = SouthBoundingCoordinate
                    END_GROUP = BoundingRectangle

/* Point*/
                    GROUP = Point
                        OBJECT = PointLatitude
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual PointLatitude for xxxx */
                            Value = xxxx
```

```
                        END_OBJECT = PointLatitude

                        OBJECT = PointLongitude
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual PointLongitude for xxxx */
                            Value = xxxx
                        END_OBJECT = PointLongitude
                    END_GROUP = Point

/* Circle*/
                    GROUP = Circle
                        OBJECT = CenterLatitude
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual CenterLatitude for xxxx */
                            Value = xxxx
                        END_OBJECT = CenterLatitude

                        OBJECT = CenterLongitude
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual CenterLongitude for xxxx */
                            Value = xxxx
                        END_OBJECT = CenterLongitude

                        OBJECT = RadiusValue
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual RadiusValue for xxxx */
                            Value = xxxx
                        END_OBJECT = RadiusValue

                        OBJECT = RadiusUnits
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual RadiusUnits for "xxxx" */
```

```
                        Value = "xxxx"
                    END_OBJECT = RadiusUnits
                END_GROUP = Circle

            END_GROUP = HorizontalSpatialDomainContainer
        END_GROUP = SpatialDomainContainer

/* CoordinateSystemContainer*/
    /* Note: VerticalCoordinateSystemContainer and                      */
    /*  HorizontalCoordinateSystemContainer are not, strictly speaking, */
    /*  container objects of multiple sets of values. These two         */
    /*  attributes have 'Container' in their names due to a naming      */
    /*  anomaly in the BNF and Data Model.                              */

        GROUP = CoordinateSystemContainer
            GROUP = VerticalCoordinateSystemContainer

/* AltitudeSystemDefinition*/
                GROUP = AltitudeSystemDefinition

                    OBJECT = AltitudeDatumName
                        Data_Location = "MCF"
                        Mandatory = "TRUE"
                        NUM_VAL = 1
                        /* Substitute actual AltitudeDatumName for xxxx */
                        Value = "xxxx"
                    END_OBJECT = AltitudeDatumName

                    OBJECT = AltitudeDistanceUnits
                        Data_Location = "MCF"
                        Mandatory = "TRUE"
                        NUM_VAL = 1
                        /* Substitute actual AltitudeDistanceUnits for xxxx */
                        Value = "xxxx"
                    END_OBJECT = AltitudeDistanceUnits

                    OBJECT = AltitudeEncodingMethod
                        Data_Location = "MCF"
                        Mandatory = "TRUE"
                        NUM_VAL = 1
                        /* Substitute actual AltitudeEncodingMethod for xxxx */
                        Value = "xxxx"
```

```
                        END_OBJECT = AltitudeEncodingMethod

                        /*  AltitudeResolutionClass  */
                        OBJECT = AltitudeResolution
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual AltitudeResolution for xxxx */
                            Value = xxxx
                        END_OBJECT = AltitudeResolution

                    END_GROUP = AltitudeSystemDefinition

/* DepthSystemDefinition*/
                    GROUP = DepthSystemDefinition

                        OBJECT = DepthDatumName
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual DepthDatumName for xxxx */
                            Value = "xxxx"
                        END_OBJECT = DepthDatumName

                        OBJECT = DepthDistanceUnits
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual DepthDistanceUnits for xxxx */
                            Value = "xxxx"
                        END_OBJECT = DepthDistanceUnits

                        OBJECT = DepthEncodingMethod
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual DepthEncodingMethod for xxxx */
                            Value = "xxxx"
                        END_OBJECT = DepthEncodingMethod

                        /*  DepthResolutionClass  */
                        OBJECT = DepthResolution
```

```
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual DepthResolution for xxxx */
                            Value = xxxx
                        END_OBJECT = DepthResolution

                    END_GROUP = DepthSystemDefinition

                END_GROUP = VerticalCoordinateSystemContainer

                GROUP = HorizontalCoordinateSystemContainer

/* GeodeticModel*/
                    GROUP = GeodeticModel

                        OBJECT = HorizontalDatumName
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual HorizontalDatumName for xxxx */
                            Value = "xxxx"
                        END_OBJECT = HorizontalDatumName

                        OBJECT = EllipsoidName
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual EllipsoidName for xxxx */
                            Value = "xxxx"
                        END_OBJECT = EllipsoidName

                        OBJECT = SemiMajorAxis
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual SemiMajorAxis for xxxx */
                            Value = xxxx
                        END_OBJECT = SemiMajorAxis

                        OBJECT = DenominatorofFlatteningRatio
                            Data_Location = "MCF"
```

```
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual DenominatorofFlatteningRatio for xxxx */
                            Value = xxxx
                        END_OBJECT = DenominatorofFlatteningRatio

                    END_GROUP = GeodeticModel


    /*  Note: One (and only one) of the following types of attribute */
    /*  classes must be present in an ESDT Descriptor:               */
    /*                                                               */
    /*                GeographicCoordinateSystems or                 */
    /*   PlanarCoordinateCoordinateSystem or LocalCoordinateSystem   */
    /*                                                               */

/* GeographicCoordinateSystem*/
                    GROUP = GeographicCoordinateSystem

                        OBJECT = LatitudeResolution
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual LatitudeResolution for xxxx */
                            Value = xxxx
                        END_OBJECT = LatitudeResolution

                        OBJECT = LongitudeResolution
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual LongitudeResolution for xxxx */
                            Value = xxxx
                        END_OBJECT = LongitudeResolution

                        OBJECT = GeographicCoordinateUnits
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute actual GeographicCoordinateUnits for xxxx */
                            Value = "xxxx"
                        END_OBJECT = GeographicCoordinateUnits
```

```
                    END_GROUP = GeographicCoordinateSystem

/* PlanarCoordinateSystems */

                    GROUP = PlanarCoordinateSystems
                        GROUP = PlanarCoordinateSystem
                            OBJECT = PlanarCoordinateSystemContainer

                                Data_Location = "NONE"
                                Mandatory = "TRUE"
                                /* Substitute ordinal number of the */
                                /* PlanarCoordinateSystemContainer for M */
                                Class = "M"

/* PlanarCoordinateInformation*/

                                GROUP = PlanarCoordinateInformation

                                   /* Substitute ordinal number of the      */
                                   /* PlanarCoordinateSystemContainer for M */
                                    Class = "M"

                                    OBJECT = PlanarDistanceUnits
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute the actual PlanarDistanceUnits */
                                        /* value for xxxx */
                                        Value = "xxxx"
                                    END_OBJECT = PlanarDistanceUnits

                                    OBJECT = PlanarCoordinateEncodingMethod
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute the actual */
                                        /* PlanarCoordinateEncodingMethod for xxxx */
                                        Value = "xxxx"
                                    END_OBJECT = PlanarCoordinateEncodingMethod

                                    /*  One of either DistanceandBearingRepresentation or*/
```

```
/*  CoordinateRepresentation must be present in a    */
/*  Descriptor File, but not more than one!          */

GROUP = DistanceandBearingRepresentation

    OBJECT = DistanceResolution
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual */
        /* DistanceResolution value for xxxx */
        Value = xxxx
    END_OBJECT = DistanceResolution

    OBJECT = BearingResolution
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute actual BearingResolution */
        /* value for xxxx */
        Value = xxxx
    END_OBJECT = BearingResolution

    OBJECT = BearingUnits
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute actual BearingUnits */
        /* value for "xxxx" */
        Value = "xxxx"
    END_OBJECT = BearingUnits

    OBJECT = BearingReferenceDirection
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /* BearingReferenceDirection for "xxxx" */
        Value = "xxxx"
    END_OBJECT = BearingReferenceDirection

    OBJECT = BearingReferenceMeridian
```

```
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    NUM_VAL = 1
                    /* Substitute the actual value of */
                    /* BearingReferenceMeridian for "xxxx" */
                    Value = "xxxx"
                END_OBJECT = BearingReferenceMeridian

            END_GROUP = DistanceandBearingRepresentation

            GROUP = CoordinateRepresentation

                OBJECT = AbscissaResolution
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    NUM_VAL = 1
                    /* Substitute the actual value of */
                    /* AbscissaResolution for xxxx */
                    Value = xxxx
                END_OBJECT = AbscissaResolution

                OBJECT = OrdinateResolution
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    NUM_VAL = 1
                    /* Substitute the actual value of */
                    /* OrdinateResolution for xxxx */
                    Value = xxxx
                END_OBJECT = OrdinateResolution

            END_GROUP = CoordinateRepresentation

        END_GROUP = PlanarCoordinateInformation


        /*  One of either MapProjection or                      */
        /*  LocalPlanarCoordinateSystem or GridCoordinateSystem */
        /*  must be present in a Descriptor File, but not more  */
        /*  than one!                                           */

/* MapProjection*/
```

```
                                GROUP = MapProjection

                                    /* Substitute ordinal number of the      */
                                    /* PlanarCoordinateSystemContainer for M */
                                    Class = "M"

                                    OBJECT = MapProjectionName
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute the actual value of */
                                        /* MapProjectionName for "xxxx" */
                                        Value = "xxxx"
                                    END_OBJECT = MapProjectionName

                                    OBJECT = MapProjectionPointer
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute the actual value of */
                                        /* MapProjectionPointer for "xxxx" */
                                        Value = "xxxx"
                                    END_OBJECT = MapProjectionPointer
                                END_GROUP = MapProjection

/* LocalPlanarCoordinateSystem*/

                                GROUP = LocalPlanarCoordinateSystem

                                    /* Substitute ordinal number of the      */
                                    /* PlanarCoordinateSystemContainer for M */
                                    Class = "M"

                                    OBJECT = LocalPlanarCoordinateSystemDescription
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute actual value of    */
                                        /* LocalPlanarCoordinateSystemDescription for xxxx */
                                        Value = "xxxx"
                                    END_OBJECT = LocalPlanarCoordinateSystemDescription
```

```
                                    OBJECT = LocalPlanarGeoreferenceInformation
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute actual value of    */
                                        /* LocalPlanarGeoreferenceInformation for xxxx */
                                        Value = "xxxx"
                                    END_OBJECT = LocalPlanarGeoreferenceInformation
                                END_GROUP = LocalPlanarCoordinateSystem

/* GridCoordinateSystem*/

                                GROUP = GridCoordinateSystem

                                    /* Substitute ordinal number of the      */
                                    /* PlanarCoordinateSystemContainer for M */
                                    Class = "M"

                                    OBJECT = GridCoordinateSystemName
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute the actual value of */
                                        /* GridCoordinateSystemName for xxxx */
                                        Value = "xxxx"
                                    END_OBJECT = GridCoordinateSystemName

                                END_GROUP = GridCoordinateSystem

                            END_OBJECT = PlanarCoordinateSystemContainer
                        END_GROUP = PlanarCoordinateSystem

                    END_GROUP = PlanarCoordinateSystems

/* LocalCoordinateSystem*/

                    GROUP = LocalCoordinateSystem

                        OBJECT = LocalCoordinateSystemDescription
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
```

```
                            /* Substitute the actual value of */
                            /* LocalCoordinateSystemDescription for xxxx */
                            Value = "xxxx"
                        END_OBJECT = LocalCoordinateSystemDescription

                        OBJECT = LocalGeoreferenceInformation
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            NUM_VAL = 1
                            /* Substitute the actual value of */
                            /* LocalGeoreferenceInformation for xxxx */
                            Value = "xxxx"
                        END_OBJECT = LocalGeoreferenceInformation

                    END_GROUP = LocalCoordinateSystem

                END_GROUP = HorizontalCoordinateSystemContainer

            END_GROUP = CoordinateSystemContainer

        END_GROUP = Spatial

/* Temporal*/

        GROUP = Temporal

            OBJECT = TimeType
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual TimeType for xxxx */
                Value = "xxxx"
            END_OBJECT = TimeType

            OBJECT = DateType
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual DateType for xxxx */
                Value = "xxxx"
            END_OBJECT = DateType
```

```
            OBJECT = TemporalRangeType
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual TemporalRangeType for xxxx */
                Value = "xxxx"
            END_OBJECT = TemporalRangeType

            OBJECT = PrecisionofSeconds
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual PrecisionofSeconds for xxxx */
                Value = xxxx
            END_OBJECT = PrecisionofSeconds

            OBJECT = EndsatPresentFlag
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual EndsatPresentFlag for xxxx */
                Value = "xxxx"
            END_OBJECT = EndsatPresentFlag

/* RegularPeriodic*/

             GROUP = RegularPeriodic
                 OBJECT = RegularPeriodicContainer

                     /*  A separate container must be used for each set   */
                     /*  of attribute values. Replace M with the ordinal  */
                     /*  number of the RegularPeriodicContainer.          */
                     Data_Location = "NONE"
                     Mandatory = "TRUE"
                     Class = "M"

                     OBJECT = PeriodName
                         Data_Location = "MCF"
                         Mandatory = "TRUE"
                         /* Substitute ordinal number of the */
                         /* RegularPeriodicContainer for M */
                         Class = "M"
```

```
    NUM_VAL = 1
    /* Substitute actual PeriodName for "xxxx" */
    Value = "xxxx"
END_OBJECT = PeriodName

/* Format of Period1stDate is YYYY-MM-DD or YYYY-DDD */
OBJECT = Period1stDate
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* RegularPeriodicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual Period1stDate for "xxxx" */
    Value = "xxxx"
END_OBJECT = Period1stDate

/* Format of Period1stTime is HH:MM:SS.SSSS... */
OBJECT = Period1stTime
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* RegularPeriodicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual Period1stTime for "xxxx" */
    Value = "xxxx"
END_OBJECT = Period1stTime

OBJECT = PeriodCycleDurationUnit
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* RegularPeriodicContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual PeriodCycleDurationUnit for "xxxx" */
    Value = "xxxx"
END_OBJECT = PeriodCycleDurationUnit

OBJECT = PeriodCycleDurationValue
    Data_Location = "MCF"
```

```
                        Mandatory = "TRUE"
                        /* Substitute ordinal number of the */
                        /* RegularPeriodicContainer for M */
                        Class = "M"
                        NUM_VAL = 1
                        /* Substitute actual PeriodCycleDurationValue for xxxx */
                        Value = xxxx
                    END_OBJECT = PeriodCycleDurationValue

                    OBJECT = PeriodDurationUnit
                        Data_Location = "MCF"
                        Mandatory = "TRUE"
                        /* Substitute ordinal number of the */
                        /* RegularPeriodicContainer for M */
                        Class = "M"
                        NUM_VAL = 1
                        /* Substitute actual PeriodDurationUnit for xxxx */
                        Value = "xxxx"
                    END_OBJECT = PeriodDurationUnit

                    OBJECT = PeriodDurationValue
                        Data_Location = "MCF"
                        Mandatory = "TRUE"
                        /* Substitute ordinal number of the */
                        /* RegularPeriodicContainer for M */
                        Class = "M"
                        NUM_VAL = 1
                        /* Substitute actual PeriodDurationValue for xxxx */
                        Value = xxxx
                    END_OBJECT = PeriodDurationValue
                END_OBJECT = RegularPeriodicContainer
            END_GROUP = RegularPeriodic

/* MultipleDateTimePeriod*/

            GROUP = MultipleDateTimePeriod
                OBJECT = MultipleDateTimePeriodContainer

                    /*  A separate container must be used for each set   */
                    /*  of attribute values. Replace M with the ordinal  */
                    /*  number of the container.                         */
                    Data_Location = "NONE"
```

```
Mandatory = "TRUE"
Class = "M"

OBJECT = MultipleDateName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* MultipleDateTimePeriodContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual MultipleDateName for xxxx */
    Value = "xxxx"
END_OBJECT = MultipleDateName

GROUP = SingleDateTimes

    /* NOTE:  There must be a minimum of two  */
    /*        SingleDateTimesContainers       */

    /* Substitute ordinal number of the */
    /* MultipleDateTimePeriodContainer for M */
    Class = "M"

    OBJECT = SingleDateTimesContainer

        /*  A separate container must be used for each set   */
        /*  of attribute values. Replace M with the ordinal  */
        /*  number of the container.                         */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

       /* Format of TimeofDay is HH:MM:SS.SSSS... */
        OBJECT = TimeofDay
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the */
            /* SingleDateTimesContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual TimeofDay for "xxxx" */
            Value = "xxxx"
```

```
                            END_OBJECT = TimeofDay

                            /* Format of CalendarDate is YYYY-MM-DD or YYYY-DDD */
                            OBJECT = CalendarDate
                                Data_Location = "MCF"
                                Mandatory = "TRUE"
                                /* Substitute ordinal number of the */
                                /* SingleDateTimesContainer for M */
                                Class = "M"
                                NUM_VAL = 1
                                /* Substitute actual CalendarDate for "xxxx" */
                                Value = "xxxx"
                            END_OBJECT = CalendarDate
                        END_OBJECT = SingleDateTimesContainer
                    END_GROUP = SingleDateTimes

                END_OBJECT = MultipleDateTimePeriodContainer
            END_GROUP = MultipleDateTimePeriod

            /*  One of either SingleDateTime or RangeDateTime must be */
            /*  present in an ESDT Descriptor File, but not both!     */

/* SingleDateTime*/

            GROUP = SingleDateTime
               /* Format of RangeBeginningTime is HH:MM:SS.SSSS... */
                OBJECT = TimeofDay
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    NUM_VAL = 1
                    /* Substitute actual TimeofDay for "xxxx" */
                    Value = "xxxx"
                END_OBJECT = TimeofDay


               /* Format of CalendarDate is YYYY-MM-DD or YYYY-DDD */
                OBJECT = CalendarDate
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    NUM_VAL = 1
                    /* Substitute actual CalendarDate for "xxxx" */
                    Value = "xxxx"
```

```
                END_OBJECT = CalendarDate
             END_GROUP = SingleDateTime

/* RangeDateTime*/

             GROUP = RangeDateTime
                /* Format of RangeEndingDate is YYYY-MM-DD or YYYY-DDD */
                 OBJECT = RangeBeginningDate
                     Data_Location = "MCF"
                     Mandatory = "TRUE"
                     NUM_VAL = 1
                     /* Substitute actual RangeBeginningDate for "xxxx" */
                     Value = "xxxx"
                 END_OBJECT = RangeBeginningDate

                /* Format of RangeBeginningTime is HH:MM:SS.SSSS... */
                 OBJECT = RangeBeginningTime
                     Data_Location = "MCF"
                     Mandatory = "TRUE"
                     NUM_VAL = 1
                     /* Substitute actual RangeBeginningTime for "xxxx" */
                     Value = "xxxx"
                 END_OBJECT = RangeBeginningTime

                /* Format of RangeEndingDate is YYYY-MM-DD or YYYY-DDD */
                 OBJECT = RangeEndingDate
                     Data_Location = "MCF"
                     Mandatory = "TRUE"
                     NUM_VAL = 1
                     /* Substitute actual RangeEndingDate for "xxxx" */
                     Value = "xxxx"
                 END_OBJECT = RangeEndingDate

                /* Format of RangeEndingTime is HH:MM:SS.SSSS... */
                 OBJECT = RangeEndingTime
                     Data_Location = "MCF"
                     Mandatory = "TRUE"
                     NUM_VAL = 1
                     /* Substitute actual RangeEndingTime for "xxxx" */
                     Value = "xxxx"
                 END_OBJECT = RangeEndingTime
            END_GROUP = RangeDateTime
```

```
        END_GROUP = Temporal

/* Contact  */
    /* The implementation of this in the B.0 template descriptor file */
    /* is to say that an ESDT descriptor file may contain multiple    */
    /* Contacts, each of which may be either ContactPerson or         */
    /* ContactOrganization. For example, if three Contacts are to be  */
    /* used for a given descriptor file, two may be of the            */
    /* ContactPerson Class and one of the ContactOrganization Class.  */
    /* The Contact ODL below represents the necessary ODL format if   */
    /* one or more ContactPerson container is used and if one or more */
    /* ContactAddress container is used.  The compound attribute      */
    /* definitions of ContactPerson and ContactOrgranization are as   */
    /* follows:                                                       */
    /*                                                                */

        GROUP = Contact

          GROUP = ContactPerson
             OBJECT = ContactPersonContainer

                /*  A separate container must be used for each set   */
                /*  of attribute values. Replace M with the ordinal  */
                /*  number of the ContactPersonContainer.            */
                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = Role
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the ContactPersonContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual Role for xxxx */
                    Value = "xxxx"
                END_OBJECT = Role

                OBJECT = HoursofService
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
```

```
    /* Substitute ordinal number of the ContactPersonContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual HoursofService for xxxx */
    Value = "xxxx"
END_OBJECT = HoursofService

OBJECT = ContactInstructions
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the ContactPersonContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual ContactInstructions for xxxx */
    Value = "xxxx"
END_OBJECT = ContactInstructions

OBJECT = ContactJobPosition
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the ContactPersonContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual ContactJobPosition for xxxx */
    Value = "xxxx"
END_OBJECT = ContactJobPosition

OBJECT = ContactFirstName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the ContactPersonContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual ContactFirstName for xxxx */
    Value = "xxxx"
END_OBJECT = ContactFirstName

OBJECT = ContactMiddleName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the ContactPersonContainer for M */
    Class = "M"
```

```
    NUM_VAL = 1
    /* Substitute actual ContactMiddleName for xxxx */
    Value = "xxxx"
END_OBJECT = ContactMiddleName

OBJECT = ContactLastName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the ContactPersonContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual ContactLastName for xxxx */
    Value = "xxxx"
END_OBJECT = ContactLastName

/* ContactPersonAddress */
GROUP = ContactPersonAddress

    /* Substitute ordinal number of the ContactPersonContainer for M */
    Class = "M"

    OBJECT = ContactPersonAddressContainer

        /*  A separate container must be used for each set   */
        /*  of attribute values. Replace M with the ordinal  */
        /*  number of the ContactPersonAddressContainer.     */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = StreetAddress
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the */
            /* ContactPersonAddressContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual StreetAddress for xxxx */
            Value = "xxxx"
        END_OBJECT = StreetAddress

        OBJECT = City
```

```
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactPersonAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual City for xxxx */
    Value = "xxxx"
END_OBJECT = City

OBJECT = StateProvince
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactPersonAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual StateProvince for xxxx */
    Value = "xxxx"
END_OBJECT = StateProvince

OBJECT = PostalCode
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactPersonAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual PostalCode for xxxx */
    Value = "xxxx"
END_OBJECT = PostalCode

OBJECT = Country
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactPersonAddressContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual Country for xxxx */
    Value = "xxxx"
END_OBJECT = Country
```

```
    END_OBJECT = ContactPersonAddressContainer
END_GROUP = ContactPersonAddress

/* Telephone */
GROUP = Telephone

    /* Substitute ordinal number of the */
    /* ContactPersonContainer for M */
    Class = "M"

    OBJECT = TelephoneContainer

        /*  A separate container must be used for each set   */
        /*  of attribute values. Replace M with the ordinal  */
        /*  number of the TelephoneContainer.                */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = TelephoneNumber
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the */
            /* TelephoneContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual TelephoneNumber for xxxx */
            Value = "xxxx"
        END_OBJECT = TelephoneNumber

        OBJECT = TelephoneNumberType
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the */
            /* TelephoneContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual TelephoneNumberType for xxxx */
            Value = "xxxx"
        END_OBJECT = TelephoneNumberType
    END_OBJECT = TelephoneContainer
```

```
        END_GROUP = Telephone

        /* Email */
        GROUP = Email

            /* Substitute ordinal number of the */
            /* ContactPersonContainer for M */
            Class = "M"

            OBJECT = ElectronicMailAddress
                Data_Location = "MCF"
                Mandatory = "TRUE"
                /* Substitute actual number of */
                /* ElectronicMailAddresses for n */
                NUM_VAL = n
                /* Substitute actual ElectronicMailAddresses */
                /* for xxxx, yyyy, etc. */
                Value = ("xxxx","yyyy")
            END_OBJECT = ElectronicMailAddress

        END_GROUP = Email

    END_OBJECT = ContactPersonContainer
END_GROUP = ContactPerson

GROUP = ContactOrganization
   OBJECT = ContactOrganizationContainer

        /*  A separate container must be used for each set   */
        /*  of attribute values. Replace M with the ordinal  */
        /*  number of the ContactOrganizationContainer.      */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = Role
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the */
            /* ContactOrganizationContainer for M */
            Class = "M"
```

```
    NUM_VAL = 1
    /* Substitute actual Role for xxxx */
    Value = "xxxx"
END_OBJECT = Role

OBJECT = HoursofService
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactOrganizationContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual HoursofService for xxxx */
    Value = "xxxx"
END_OBJECT = HoursofService

OBJECT = ContactInstructions
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactOrganizationContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual ContactInstructions for xxxx */
    Value = "xxxx"
END_OBJECT = ContactInstructions

OBJECT = ContactOrganizationName
    Data_Location = "MCF"
    Mandatory = "TRUE"
    /* Substitute ordinal number of the */
    /* ContactOrganizationContainer for M */
    Class = "M"
    NUM_VAL = 1
    /* Substitute actual ContactOrganizationName for xxxx */
    Value = "xxxx"
END_OBJECT = ContactOrganizationName

/* ContactOrganizationAddress */
GROUP = ContactOrganizationAddress

    /* Substitute ordinal number of the */
```

```
/* ContactOrganizationContainer for M */
Class = "M"

OBJECT = ContactOrganizationAddressContainer

    /* A separate container must be used for each set of  */
    /* attribute values. Replace M with the ordinal       */
    /* number of the ContactOrganizationAddressContainer. */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

    OBJECT = StreetAddress
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* ContactOrganizationAddressContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute actual StreetAddress for xxxx */
        Value = "xxxx"
    END_OBJECT = StreetAddress

    OBJECT = City
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* ContactOrganizationAddressContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute actual City for xxxx */
        Value = "xxxx"
    END_OBJECT = City

    OBJECT = StateProvince
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* ContactOrganizationAddressContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute actual StateProvince for xxxx */
```

```
                Value = "xxxx"
            END_OBJECT = StateProvince

            OBJECT = PostalCode
                Data_Location = "MCF"
                Mandatory = "TRUE"
                /* Substitute ordinal number of the */
                /* ContactOrganizationAddressContainer for M */
                Class = "M"
                NUM_VAL = 1
                /* Substitute actual PostalCode for xxxx */
                Value = "xxxx"
            END_OBJECT = PostalCode

            OBJECT = Country
                Data_Location = "MCF"
                Mandatory = "TRUE"
                /* Substitute ordinal number of the */
                /* ContactOrganizationAddressContainer for M */
                Class = "M"
                NUM_VAL = 1
                /* Substitute actual Country for xxxx */
                Value = "xxxx"
            END_OBJECT = Country

        END_OBJECT = ContactOrganizationAddressContainer
    END_GROUP = ContactOrganizationAddress

    /* OrganizationTelephone */
    GROUP = OrganizationTelephone

        /* Substitute ordinal number of the */
        /* ContactOrganizationContainer for M */
        Class = "M"

        OBJECT = OrganizationTelephoneContainer

            /*  A separate container must be used for each set   */
            /*  of attribute values. Replace M with the ordinal  */
            /*  number of the OrganizationTelephoneContainer.    */
            Data_Location = "NONE"
            Mandatory = "TRUE"
```

```
            Class = "M"

            OBJECT = TelephoneNumber
                Data_Location = "MCF"
                Mandatory = "TRUE"
                /* Substitute ordinal number of the */
                /* OrganizationTelephoneContainer for M */
                Class = "M"
                NUM_VAL = 1
                /* Substitute actual TelephoneNumber for xxxx */
                Value = "xxxx"
            END_OBJECT = TelephoneNumber

            OBJECT = TelephoneNumberType
                Data_Location = "MCF"
                Mandatory = "TRUE"
                /* Substitute ordinal number of the */
                /* OrganizationTelephoneContainer for M */
                Class = "M"
                NUM_VAL = 1
                /* Substitute actual TelephoneNumberType for xxxx */
                Value = "xxxx"
            END_OBJECT = TelephoneNumberType

        END_OBJECT = OrganizationTelephoneContainer

    END_GROUP = OrganizationTelephone

    /* OrganizationEmail */
    GROUP = OrganizationEmail

        /* Substitute ordinal number of the */
        /* ContactOrganizationContainer for M */
        Class = "M"

        OBJECT = ElectronicMailAddress
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute actual number of */
            /* ElectronicMailAddresses for n */
            NUM_VAL = n
            /* Substitute actual ElectronicMailAddresses */
```

```
                        /* for xxxx, yyyy, etc. */
                        Value = ("xxxx","yyyy")
                    END_OBJECT = ElectronicMailAddress

                END_GROUP = OrganizationEmail

            END_OBJECT = ContactOrganizationContainer
          END_GROUP = ContactOrganization

        END_GROUP = Contact

/* Note: The ODL implementation of the DisciplineTopicParameters     */
/* class does not contain all the associations among its attributes  */
/* that are implicit in the Data Model, due to the limitations of ODL*/
        GROUP = DisciplineTopicParameters
            OBJECT = DisciplineTopicParametersContainer

                /* A separate container must be used for each set    */
                /* of attribute values. Replace M with the ordinal   */
                /* number of the DisciplineTopicParametersContainer. */
                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = ECSDisciplineKeyword
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the container for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual ECSDisciplineKeyword for xxxx */
                    Value = "xxxx"
                END_OBJECT = ECSDisciplineKeyword

                OBJECT = ECSTopicKeyword
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the container for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual ECSTopicKeyword for xxxx */
                    Value = "xxxx"
```

```
  END_OBJECT = ECSTopicKeyword

  OBJECT = ECSTermKeyword
      Data_Location = "MCF"
      Mandatory = "TRUE"
      /* Substitute ordinal number of the container for M */
      Class = "M"
      NUM_VAL = 1
      /* Substitute actual ECSTermKeyword for xxxx */
      Value = "xxxx"
  END_OBJECT = ECSTermKeyword

  OBJECT = ECSVariableKeyword
      Data_Location = "MCF"
      Mandatory = "TRUE"
      /* Substitute ordinal number of the container for M */
      Class = "M"
      NUM_VAL = 1
      /* Substitute actual ECSVariableKeyword for xxxx */
      Value = "xxxx"
  END_OBJECT = ECSVariableKeyword

/* ECSParameter*/

  GROUP = ECSParameter

          /* Substitute ordinal number of the */
          /* DisciplineTopicParametersContainer for M */
          Class = "M"

          OBJECT = ECSParameterKeyword
              Data_Location = "MCF"
              Mandatory = "TRUE"
              /* Substitute the actual number of */
              /* ECSParameterKeywords for n */
              NUM_VAL = n
              /* Substitute the actual values of */
              /* ECSParameterKeywords for xxxx, yyyy, etc. */
              Value = ("xxxx","yyyy")
          END_OBJECT = ECSParameterKeyword

  END_GROUP = ECSParameter
```

```
            END_OBJECT = DisciplineTopicParametersContainer
        END_GROUP = DisciplineTopicParameters

     /* TemporalKeywordClass */
        GROUP    = TemporalKeywordClass
             OBJECT = TemporalKeyword
                 Data_Location  = "MCF"
                 Mandatory      = "TRUE"
                 /* Substitute actual number of TemporalKeywords for n */
                 NUM_VAL        = n
                 /* Substitute actual TemporalKeywords for xxxx, yyyy, etc. */
                 Value      = ("xxxx","yyyy")
              END_OBJECT    = TemporalKeyword
        END_GROUP    = TemporalKeywordClass

     /* SpatialKeywordClass */
       GROUP    = SpatialKeywordClass
             OBJECT    = SpatialKeyword
                 Data_Location  = "MCF"
                 Mandatory      = "TRUE"
                 /* Substitute actual number of SpatialKeywords for n */
                 NUM_VAL        = n
                 /* Substitute actual SpatialKeywords for xxxx, yyyy, etc. */
                 Value      = ("xxxx","yyyy")
              END_OBJECT    = SpatialKeyword
        END_GROUP    = SpatialKeywordClass

    /* Locality*/
        GROUP = Locality
            OBJECT = LocalityContainer

                /*  A separate container must be used for each set   */
                /*  of attribute values. Replace M with the ordinal  */
                /*  number of the container.                         */
                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = LocalityDescription
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
```

```
                    /* Substitute ordinal number of the LocalityContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual LocalityDescription for xxxx */
                    Value = "xxxx"
                END_OBJECT = LocalityDescription

                OBJECT = LocalityType
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the LocalityContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual LocalityType for xxxx */
                    Value = "xxxx"
                END_OBJECT = LocalityType

            END_OBJECT = LocalityContainer
        END_GROUP = Locality

/* ProcessingLevel */
        GROUP = ProcessingLevel
            OBJECT = ProcessingLevelDescription
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual ProcessingLevelDescription for xxxx */
                Value = "xxxx"
            END_OBJECT = ProcessingLevelDescription

            OBJECT = ProcessingLevelID
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                /* Substitute actual ProcessingLevelID for xxxx */
                Value = "xxxx"
            END_OBJECT = ProcessingLevelID
        END_GROUP = ProcessingLevel

/* Platform */
        GROUP = Platform
            OBJECT = PlatformContainer
```

```
                /*  A separate container must be used for each set   */
                /*  of attribute values. Replace M with the ordinal  */
                /*  number of the PlatformContainer.                 */
                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = PlatformShortName
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the PlatformContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual PlatformShortName for "xxxx" */
                    Value = "xxxx"
                END_OBJECT = PlatformShortName

                OBJECT = PlatformLongName
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the PlatformContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual PlatformLongName for "xxxx" */
                    Value = "xxxx"
                END_OBJECT = PlatformLongName

                OBJECT = PlatformType
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the PlatformContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual PlatformType for "xxxx" */
                    Value = "xxxx"
                END_OBJECT = PlatformType

/* PlatformCharacteristic*/

                GROUP = PlatformCharacteristic
```

```
/* Replace M with the ordinal number */
/* of the PlatformContainer*/
Class = "M"

OBJECT = PlatformCharacteristicContainer

    /*  A separate container must be used for each set   */
    /*  of attribute values. Replace M with the ordinal  */
    /*  number of the PlatformCharacteristicContainer.   */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

    OBJECT = PlatformCharacteristicName
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* PlatformCharacteristicContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /* PlatformCharacteristicName for "xxxx" */
        Value = "xxxx"
    END_OBJECT = PlatformCharacteristicName

    OBJECT = PlatformCharacteristicDescription
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* PlatformCharacteristicContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /* PlatformCharacteristicDescription for "xxxx" */
        Value = "xxxx"
    END_OBJECT = PlatformCharacteristicDescription

    OBJECT = PlatformCharacteristicDataType
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* PlatformCharacteristicContainer for M */
```

```
                                Class = "M"
                                NUM_VAL = 1
                                /* Substitute the actual value of */
                                /* PlatformCharacteristicDataType for "xxxx" */
                                Value = "xxxx"
                            END_OBJECT = PlatformCharacteristicDataType

                            OBJECT = PlatformCharacteristicUnit
                                Data_Location = "MCF"
                                Mandatory = "TRUE"
                                /* Substitute ordinal number of the */
                                /* PlatformCharacteristicContainer for M */
                                Class = "M"
                                NUM_VAL = 1
                                /* Substitute the actual value of */
                                /* PlatformCharacteristicUnit for "xxxx" */
                                Value = "xxxx"
                            END_OBJECT = PlatformCharacteristicUnit

/* PlatformCharacteristicValueClass*/

                            GROUP = PlatformCharacteristicValueClass

                                /* Substitute ordinal number of the */
                                /* PlatformCharacteristicContainer for M */
                                Class = "M"

                                OBJECT = PlatformCharacteristicValue
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    NUM_VAL = 1
                                    /* Substitute the actual value of */
                                    /* PlatformCharacteristicValue for "xxxx" */
                                    Value = "xxxx"
                                END_OBJECT = PlatformCharacteristicValue

                            END_GROUP = PlatformCharacteristicValueClass

                        END_OBJECT = PlatformCharacteristicContainer

                    END_GROUP = PlatformCharacteristic
```

```
/* Instrument*/

                GROUP = Instrument

                    /* Replace M with the ordinal number of the */
                    /*  PlatformContainer  */
                    Class = "M"

                    OBJECT = InstrumentContainer

                        /*  A separate container must be used for each set   */
                        /*  of attribute values. Replace M with the ordinal  */
                        /*  number of the InstrumentContainer.               */
                        Data_Location = "NONE"
                        Mandatory = "TRUE"
                        Class = "M"

                    /*  Instrument  */
                        OBJECT = InstrumentShortName
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            /* Substitute ordinal number of the */
                            /*  InstrumentContainer for M */
                            Class = "M"
                            NUM_VAL = 1
                            /* Substitute actual InstrumentShortName for xxxx */
                            Value = "xxxx"
                        END_OBJECT = InstrumentShortName

                        OBJECT = InstrumentLongName
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            /* Substitute ordinal number of the */
                            /* InstrumentContainer for M */
                            Class = "M"
                            NUM_VAL = 1
                            /* Substitute actual InstrumentLongName for xxxx */
                            Value = "xxxx"
                        END_OBJECT = InstrumentLongName

                        OBJECT = InstrumentTechnique
                            Data_Location = "MCF"
```

```
                            Mandatory = "TRUE"
                            /* Substitute ordinal number of the */
                            /* InstrumentContainer for M */
                            Class = "M"
                            NUM_VAL = 1
                            /* Substitute actual InstrumentTechnique for xxxx */
                            Value = "xxxx"
                        END_OBJECT = InstrumentTechnique

                        OBJECT = NumberofSensors
                            Data_Location = "MCF"
                            Mandatory = "TRUE"
                            /* Substitute ordinal number of the */
                            /* InstrumentContainer for M */
                            Class = "M"
                            NUM_VAL = 1
                            /* Substitute actual NumberofSensors for xxxx */
                            Value = xxxx
                        END_OBJECT = NumberofSensors

/* OperationModeClass*/

                        GROUP = OperationModeClass

                            /* Substitute ordinal number of the */
                            /* InstrumentContainer for M */
                            Class = "M"

                            OBJECT = OperationMode
                                Data_Location = "MCF"
                                Mandatory = "TRUE"
                                /* Substitute actual number of OperationModes for n */
                                NUM_VAL = n
                                /* Substitute actual OperationModes for xxxx, yyyy, etc. */
                                Value = ("xxxx","yyyy")
                            END_OBJECT = OperationMode
                        END_GROUP = OperationModeClass

/* InstrumentCharacteristic*/

                        GROUP = InstrumentCharacteristic
```

```
/* Substitute ordinal number of the */
/* InstrumentContainer for M */
Class = "M"

OBJECT = InstrumentCharacteristicContainer

    /*  A separate container must be used for each set   */
    /*  of attribute values. Replace M with the ordinal  */
    /*  number of the InstrumentCharacteristicContainer. */
    Data_Location = "NONE"
    Mandatory = "TRUE"
    Class = "M"

    OBJECT = InstrumentCharacteristicName
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /* InstrumentCharacteristicContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute actual InstrumentCharacteristicName */
        /* for xxxx */
        Value = "xxxx"
    END_OBJECT = InstrumentCharacteristicName

    OBJECT = InstrumentCharacteristicDescription
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the */
        /*  InstrumentCharacteristicContainer for M */
        Class = "M"
        NUM_VAL = 1
        /* Substitute the actual value of */
        /*  InstrumentCharacteristicDescription for xxxx */
        Value = "xxxx"
    END_OBJECT = InstrumentCharacteristicDescription

    OBJECT = InstrumentCharacteristicUnit
        Data_Location = "MCF"
        Mandatory = "TRUE"
        /* Substitute ordinal number of the  */
        /* InstrumentCharacteristicContainer for M */
```

```
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute the actual value of */
                                    /*  InstrumentCharacteristicUnit for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = InstrumentCharacteristicUnit

                                OBJECT = InstrumentCharacteristicDataType
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    /* Substitute ordinal number of the  */
                                    /* InstrumentCharacteristicContainer for M */
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute the actual value of */
                                    /*  InstrumentCharacteristicDataType for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = InstrumentCharacteristicDataType

/* InstrumentCharacteristicValueClass*/

                                GROUP = InstrumentCharacteristicValueClass

                                    /* Substitute ordinal number of the  */
                                    /* InstrumentCharacteristicContainer for M */
                                    Class = "M"

                                    OBJECT = InstrumentCharacteristicValue
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute the actual value of */
                                        /* InstrumentCharacteristicValue for "xxxx" */
                                        Value = "xxxx"
                                    END_OBJECT = InstrumentCharacteristicValue

                                END_GROUP = InstrumentCharacteristicValueClass

                            END_OBJECT = InstrumentCharacteristicContainer

                        END_GROUP = InstrumentCharacteristic
```

```
/* Sensor*/

                        GROUP = Sensor

                            /* Substitute ordinal number of the */
                            /* InstrumentContainer for M */
                            Class = "M"

                            OBJECT = SensorContainer

                                /*  A separate container must be used for each set  */
                                /*  of attribute values. Replace M with the ordinal */
                                /*  number of the SensorContainer.                  */
                                Data_Location = "NONE"
                                Mandatory = "TRUE"
                                Class = "M"

                                OBJECT = SensorShortName
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    /* Substitute ordinal number of the */
                                    /* SensorContainer for M */
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute actual SensorShortName for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = SensorShortName

                                OBJECT = SensorLongName
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    /* Substitute ordinal number of the */
                                    /*  SensorContainer for M */
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute actual SensorLongName for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = SensorLongName

                                OBJECT = SensorTechnique
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
```

```
                                    /* Substitute ordinal number of the */
                                    /* SensorContainer for M */
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute actual SensorTechnique for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = SensorTechnique

/* SensorCharacteristic*/

                                GROUP = SensorCharacteristic

                                    /* Substitute ordinal number of the */
                                    /* SensorContainer for M */
                                    Class = "M"

                                    OBJECT = SensorCharacteristicContainer

                                        /*  A separate container must be used for */
                                        /*  each set of attribute values. Replace */
                                        /*  M with the ordinal number of the      */
                                        /*  SensorCharacteristicContainer.        */
                                        Data_Location = "NONE"
                                        Mandatory = "TRUE"
                                        Class = "M"

                                      /*  SensorCharacteristic      */
                                        OBJECT = SensorCharacteristicName
                                            Data_Location = "MCF"
                                            Mandatory = "TRUE"
                                            /* Substitute ordinal number of the  */
                                            /*  SensorCharacteristicContainer for M */
                                            Class = "M"
                                            NUM_VAL = 1
                                            /* Substitute the actual value of  */
                                            /* SensorCharacteristicName for xxxx */
                                            Value = "xxxx"
                                        END_OBJECT = SensorCharacteristicName

                                        OBJECT = SensorCharacteristicDescription
                                            Data_Location = "MCF"
                                            Mandatory = "TRUE"
```

```
                                    /* Substitute ordinal number of the  */
                                    /*  SensorCharacteristicContainer for M */
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute the actual value of */
                                    /* SensorCharacteristicDescription for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = SensorCharacteristicDescription

                                OBJECT = SensorCharacteristicDataType
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    /* Substitute ordinal number of the  */
                                    /*  SensorCharacteristicContainer for M */
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute the actual value of */
                                    /* SensorCharacteristicDataType for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = SensorCharacteristicDataType

                                OBJECT = SensorCharacteristicUnit
                                    Data_Location = "MCF"
                                    Mandatory = "TRUE"
                                    /* Substitute ordinal number of the  */
                                    /*  SensorCharacteristicContainer for M */
                                    Class = "M"
                                    NUM_VAL = 1
                                    /* Substitute the actual value of */
                                    /* SensorCharacteristicUnit for xxxx */
                                    Value = "xxxx"
                                END_OBJECT = SensorCharacteristicUnit

/* SensorCharacteristic*/

                                GROUP = SensorCharacteristicValueClass

                                    /* Substitute ordinal number of the  */
                                    /* SensorCharacteristicContainer for M */
                                    Class = "M"

                                    OBJECT = SensorCharacteristicValue
```

```
                                        Data_Location = "MCF"
                                        Mandatory = "TRUE"
                                        NUM_VAL = 1
                                        /* Substitute the actual value of */
                                        /* SensorCharacteristicValue for "xxxx" */
                                        Value = "xxxx"
                                    END_OBJECT = SensorCharacteristicValue

                                END_GROUP = SensorCharacteristicValueClass

                            END_OBJECT = SensorCharacteristicContainer
                        END_GROUP = SensorCharacteristic

                    END_OBJECT = SensorContainer
                END_GROUP = Sensor

            END_OBJECT = InstrumentContainer
        END_GROUP = Instrument

    END_OBJECT = PlatformContainer
END_GROUP = Platform

/* AnalysisSource*/

    GROUP = AnalysisSource
        OBJECT = AnalysisSourceContainer

            /*  A separate container must be used for each set   */
            /*  of attribute values. Replace M with the ordinal  */
            /*  number of the AnalysisSourceContainer.           */
            Data_Location = "NONE"
            Mandatory = "TRUE"
            Class = "M"

            OBJECT = AnalysisShortName
                Data_Location = "MCF"
                Mandatory = "TRUE"
                /* Substitute ordinal number of the */
                /* AnalysisSourceContainer for M */
                Class = "M"
                NUM_VAL = 1
                /* Substitute actual AnalysisShortName for xxxx */
```

```
                    Value = "xxxx"
                END_OBJECT = AnalysisShortName

                OBJECT = AnalysisLongName
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* AnalysisSourceContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual AnalysisLongName for xxxx */
                    Value = "xxxx"
                END_OBJECT = AnalysisLongName

                OBJECT = AnalysisTechnique
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* AnalysisSourceContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual AnalysisTechnique for xxxx */
                    Value = "xxxx"
                END_OBJECT = AnalysisTechnique

                OBJECT = AnalysisType
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* AnalysisSourceContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual AnalysisType for xxxx */
                    Value = "xxxx"
                END_OBJECT = AnalysisType

            END_OBJECT = AnalysisSourceContainer

        END_GROUP = AnalysisSource

/* Campaign*/
```

```
GROUP = Campaign
    OBJECT = CampaignContainer

        /*  A separate container must be used for each set   */
        /*  of attribute values. Replace M with the ordinal  */
        /*  number of the CampaignContainer.                 */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = CampaignShortName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the CampaignContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual CampaignShortName for xxxx */
            Value = "xxxx"
        END_OBJECT = CampaignShortName

        OBJECT = CampaignLongName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the CampaignContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual CampaignLongName for xxxx */
            Value = "xxxx"
        END_OBJECT = CampaignLongName

      /* Format of CampaignStartDate is YYYY-MM-DD or YYYY-DDD */
        OBJECT = CampaignStartDate
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the CampaignContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual CampaignStartDate for "xxxx" */
            Value = "xxxx"
        END_OBJECT = CampaignStartDate

      /* Format of CampaignEndDate is YYYY-MM-DD or YYYY-DDD */
```

```
                OBJECT = CampaignEndDate
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the CampaignContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual CampaignEndDate for "xxxx" */
                    Value = "xxxx"
                END_OBJECT = CampaignEndDate

            END_OBJECT = CampaignContainer
        END_GROUP = Campaign


/* CollectionAssociation*/
    /*    NOTE: The ShortName and VersionID used in            */
    /* CollectionAssociation refer to the ESDTs of data        */
    /* products that are used to create or are created by the  */
    /* data type defined by a ESDT descriptor file.  The       */
    /* CollectionAssociation ShortName and VersionID values    */
    /* should NOT match the ShortName and VersionID values     */
    /* in GROUP = CollectionDescriptionClass at the start of   */
    /* the COLLECTIONMETADATA section which are used to define */
    /* a given ESDT.                                           */

        GROUP = CollectionAssociation
            OBJECT = CollectionAssociationContainer

                /*  A separate container must be used for each set   */
                /*  of attribute values. Replace M with the ordinal  */
                /*  number of the CollectionAssociationContainer.    */
                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = CollectionType
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* CollectionAssociationContainer for M */
                    Class = "M"
                    NUM_VAL = 1
```

```
                    /* Substitute actual CollectionType for xxxx */
                    Value = "xxxx"
                END_OBJECT = CollectionType

                OBJECT = CollectionUse
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* CollectionAssociationContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual CollectionUse for xxxx */
                    Value = "xxxx"
                END_OBJECT = CollectionUse

                OBJECT = ShortName
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* CollectionAssociationContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual associated ShortName for xxxx */
                    Value = "xxxx"
                END_OBJECT = ShortName

                OBJECT = VersionID
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* CollectionAssociationContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute actual associated VersionID for xxxx */
                    Value = xxxx
                END_OBJECT = VersionID

            END_OBJECT = CollectionAssociationContainer
        END_GROUP = CollectionAssociation

/* Review*/
```

```
GROUP = Review
    OBJECT = ReviewContainer

        /*  A separate container must be used for each set   */
        /*  of attribute values. Replace M with the ordinal  */
        /*  number of the ReviewContainer.                   */
        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        OBJECT = ScienceReviewDate
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the ReviewContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual ScienceReviewDate for xxxx */
            Value = "xxxx"
        END_OBJECT = ScienceReviewDate

        OBJECT = ScienceReviewStatus
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the ReviewContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual ScienceReviewStatus for xxxx */
            Value = "xxxx"
        END_OBJECT = ScienceReviewStatus

        OBJECT = FutureReviewDate
            Data_Location = "MCF"
            Mandatory = "TRUE"
            /* Substitute ordinal number of the ReviewContainer for M */
            Class = "M"
            NUM_VAL = 1
            /* Substitute actual FutureReviewDate for xxxx */
            Value = "xxxx"
        END_OBJECT = FutureReviewDate

    END_OBJECT = ReviewContainer
END_GROUP = Review
```

```
/* CSDTDescription*/

        GROUP = CSDTDescription

            OBJECT = PrimaryCSDT
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                Value = "xxxx"
            END_OBJECT = PrimaryCSDT

            OBJECT = IndirectReference
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                Value = "xxxx"
            END_OBJECT = IndirectReference

            OBJECT = Implementation
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                Value = "xxxx"
            END_OBJECT = Implementation

            OBJECT = CSDTComments
                Data_Location = "MCF"
                Mandatory = "TRUE"
                NUM_VAL = 1
                Value = "xxxx"
            END_OBJECT = CSDTComments

        END_GROUP = CSDTDescription

/* AdditionalAttributes*/

        GROUP = AdditionalAttributes
            OBJECT = AdditionalAttributesContainer

                /*  A separate container must be used for each set   */
                /*  of attribute values. Replace M with the ordinal  */
```

```
                /*  number of the AdditionalAttributesContainer.     */
                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = AdditionalAttributeDatatype
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* AdditionalAttributesContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute the actual value of */
                    /* PlatformCharacteristicDescription for xxxx */
                    Value = "xxxx"
                END_OBJECT = AdditionalAttributeDatatype

                OBJECT = AdditionalAttributeDescription
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* AdditionalAttributesContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute the actual value of */
                    /* PlatformCharacteristicDescription for xxxx */
                    Value = "xxxx"
                END_OBJECT = AdditionalAttributeDescription

                OBJECT = AdditionalAttributeName
                    Data_Location = "MCF"
                    Mandatory = "TRUE"
                    /* Substitute ordinal number of the */
                    /* AdditionalAttributesContainer for M */
                    Class = "M"
                    NUM_VAL = 1
                    /* Substitute the actual value */
                    /* PlatformCharacteristicDescription for xxxx */
                    Value = "xxxx"
                END_OBJECT = AdditionalAttributeName

/* PhysicalParameterDetails*/
```

```
GROUP = PhysicalParameterDetails

    /* Substitute ordinal number of the  */
    /*  AdditionalAttributesContainer for M */
    Class = "M"

    OBJECT = ParameterUnitsofMeasurement
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute actual ParameterUnitsofMeasurement for xxxx */
        Value = "xxxx"
    END_OBJECT = ParameterUnitsofMeasurement

    OBJECT = ParameterRangeBegin
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute actual ParameterRangeBegin for xxxx */
        Value = "xxxx"
    END_OBJECT = ParameterRangeBegin

    OBJECT = ParameterRangeEnd
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute actual ParameterRangeEnd for xxxx */
        Value = "xxxx"
    END_OBJECT = ParameterRangeEnd

    OBJECT = ParameterValueAccuracy
        Data_Location = "MCF"
        Mandatory = "TRUE"
        NUM_VAL = 1
        /* Substitute actual ParameterValueAccuracy for "xxxx" */
        Value = "xxxx"
    END_OBJECT = ParameterValueAccuracy

    OBJECT = ParameterValueAccuracyExplanation
        Data_Location = "MCF"
        Mandatory = "TRUE"
```

```
                        NUM_VAL = 1
                        /* Substitute actual ParameterValueAccuracyExplanation for xxxx */
                        Value = "xxxx"
                    END_OBJECT = ParameterValueAccuracyExplanation

                    OBJECT = ParameterMeasurementResolution
                        Data_Location = "MCF"
                        Mandatory = "TRUE"
                        NUM_VAL = 1
                        /* Substitute actual ParameterMeasurementResolution for "xxxx" */
                        Value = "xxxx"
                    END_OBJECT = ParameterMeasurementResolution
                END_GROUP = PhysicalParameterDetails

/* InformationContent*/

                GROUP = InformationContent

                    /* Substitute ordinal number of the  */
                    /*  AdditionalAttributesContainer for M */
                    Class = "M"

                    OBJECT = ParameterValue
                        Data_Location = "MCF"
                        Mandatory = "TRUE"
                        NUM_VAL = 1
                        /* Substitute actual ParameterValue for "xxxx" */
                        Value = "xxxx"
                    END_OBJECT = ParameterValue
                END_GROUP = InformationContent

            END_OBJECT = AdditionalAttributesContainer
        END_GROUP = AdditionalAttributes

/* StorageMediumClass*/

        GROUP = StorageMediumClass
            OBJECT = StorageMedium
                Data_Location = "MCF"
                Mandatory = "TRUE"
                /* Substitute actual number of StorageMedia for n */
                NUM_VAL = n
```

```
                /* Substitute actual StorageMedia for xxxx, yyyy, etc. */
                Value = ("xxxx","yyyy")
            END_OBJECT = StorageMedium
        END_GROUP = StorageMediumClass

    END_GROUP = COLLECTIONMETADATA

    GROUP = INVENTORYMETADATA
        GROUPTYPE = MASTERGROUP
/*                                                                  */
/*  NOTE: Some of the attributes corresponding to the DID311 BNF do not */
/*  appear in the INVENTORYMETADATA portion of this ESDT descriptor     */
/*  file template.  For example, ProcessingHistoryPointer,              */
/*  QAGranulePointer, BrowsePointer and UserCommentDocumentPointer are  */
/*  not present in this file because they are not set by the science    */
/*  software.                                                           */
/*                                                                      */
/*  The ODL Structure below for the INVENTORYMETADATA group follows the */
/*  BNF broadly, but must also conform to the examples given in         */
/*  Appendix J of the "Release A SCF Toolkit Users Guide", November     */
/*  1996 (333-CD-003-005).  The INVENTORYMETADATA group is the basis for*/
/*  data server generation of the Metadata Configuration File used by   */
/*  the PGE in setting the granule-level attribute values.              */
/*                                                                      */
/*  NOTE: The ODL for each granule-level attribute in INVENTORYMETADATA */
/*  can include a VALIDRULE field which is not provided in the actual   */
/*  ODL in the template below.  VALIDRULE can be optionally added       */
/*  between the OBJECT/END_OBJECT for a given attribute in order to     */
/*  indicate a rule which can be applied to the values that are set by  */
/*  the science software for granule-level attributes. The VALIDRULE    */
/*  may either take the form of "Match(value1, value2, value3, etc.)"   */
/*  to specify a valids list, or "Range(beginningvalue, endingvalue)"   */
/*  defines a range of valid values for a given attribute.  This        */
/*  provides the ESDT creators with a means of overriding the valids of */
/*  a given ECS Core attribute by further restricting the acceptable    */
/*  values in an ESDT-specific manner. Cmomented out below is an        */
/*  hypothetical example of VALIDRULE in use:                           */
/*                                                                      */
/*                  OBJECT = OperationMode                              */
/*                      Data_Location = "PGE"                           */
/*                      Mandatory = "TRUE"                              */
/*                      Class = "M"                                     */
```

```
/*                      TYPE = "STRING"                                  */
/*                      NUM_VAL = 1                                      */
/*                      VALIDRULE = "Match("SCIENCE", "CALIBRATION")"    */
/*                  END_OBJECT = OperationMode                           */
/*                                                                       */


/* ECSDataGranule */
    GROUP = ECSDataGranule

        /*  Note: SizeMBECSDataGranule will be set by DSS,  */
        /*  not by the science software.                    */

        OBJECT = SizeMBECSDataGranule
            Data_Location = "DSS"
            Mandatory = "FALSE"
            TYPE = "DOUBLE"
            NUM_VAL = 1
        END_OBJECT = SizeMBECSDataGranule

        OBJECT = ReprocessingPlanned
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = ReprocessingPlanned

        OBJECT = ReprocessingActual
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
         END_OBJECT = ReprocessingActual

        OBJECT = LocalGranuleID
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = LocalGranuleID

        OBJECT = DayNightFlag
```

```
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = DayNightFlag

        /*  Note: ProductionDateTime will not be set directly by   */
        /*  the science software. The attribute value will instead */
        /*  be set automatically when the SDP Toolkit routine      */
        /*  PGS_MET_Write is called by the science software.       */
        /*  PGS_MET_Write writes the science software-populated    */
        /*  INVENTORYMETADATA attribute values to an ASCII file    */
        /*  for Data Server insert, and to an HDF-EOS file as      */
        /*  appropriate. In addition, PGS_MET_Write automatically  */
        /*  populates ProductionDateTime with the value of the     */
        /*  time at which PGS_MET_Write was called, therefore      */
        /*  capturing the time at which science software           */
        /*  processing of a given data granule is being completed. */

        OBJECT = ProductionDateTime
            Data_Location = "TK"
            Mandatory = "TRUE"
            TYPE = "DATETIME"
            NUM_VAL = 1
        END_OBJECT = ProductionDateTime

        OBJECT = LocalVersionID
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = LocalVersionID

    END_GROUP = ECSDataGranule

    /* MeasuredParameter  */
    GROUP = MeasuredParameter

        OBJECT = MeasuredParameterContainer

            Data_Location = "NONE"
            Class = "M"
```

```
            Mandatory = "TRUE"

            OBJECT = ParameterName
                Data_Location = "PGE"
                Mandatory = "TRUE"
                Class = "M"
                TYPE = "STRING"
                NUM_VAL = 1
            END_OBJECT = ParameterName

            /*  QAFlags  */
            /* Note: Only AutomaticQualityFlag and                          */
            /* AutomaticQualityFlagExplanation will be set by the science   */
            /* software.  The Data_Location = "DAAC" or "DP" of the other   */
            /* four attributes reflect the fact that they will be set       */
            /* through manual methods by DAAC staff or by a representative  */
            /* of the Data Provider.                                        */
            GROUP = QAFlags

                Class = "M"

                OBJECT = AutomaticQualityFlag
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = AutomaticQualityFlag

                OBJECT = AutomaticQualityFlagExplanation
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = AutomaticQualityFlagExplanation

                OBJECT = OperationalQualityFlag
                    Data_Location = "DAAC"
                    Mandatory = "FALSE"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = OperationalQualityFlag
```

```
        OBJECT = OperationalQualityFlagExplanation
            Data_Location = "DAAC"
            Mandatory = "FALSE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = OperationalQualityFlagExplanation

        OBJECT = ScienceQualityFlag
            Data_Location = "DP"
            Mandatory = "FALSE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = ScienceQualityFlag

        OBJECT = ScienceQualityFlagExplanation
            Data_Location = "DP"
            Mandatory = "FALSE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = ScienceQualityFlagExplanation

    END_GROUP = QAFlags

    /* QAStats */
    GROUP = QAStats

        Class = "M"

        OBJECT = QAPercentInterpolatedData
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "INTEGER"
            NUM_VAL = 1
        END_OBJECT = QAPercentInterpolatedData

        OBJECT = QAPercentMissingData
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "INTEGER"
            NUM_VAL = 1
        END_OBJECT = QAPercentMissingData
```

```
                OBJECT = QAPercentOutofBoundsData
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    TYPE = "INTEGER"
                    NUM_VAL = 1
                END_OBJECT = QAPercentOutofBoundsData

                OBJECT = QAPercentCloudCover
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    TYPE = "INTEGER"
                    NUM_VAL = 1
                END_OBJECT = QAPercentCloudCover

            END_GROUP = QAStats

        END_OBJECT = MeasuredParameterContainer

    END_GROUP = MeasuredParameter

/*  OrbitCalculatedSpatialDomain  */
    GROUP = OrbitCalculatedSpatialDomain
        OBJECT = OrbitCalculatedSpatialDomainContainer

                Data_Location = "NONE"
                Class = "M"
                Mandatory = "TRUE"

                OBJECT = OrbitalModelName
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = OrbitalModelName

                OBJECT = OrbitNumber
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "INTEGER"
                    NUM_VAL = 1
```

```
END_OBJECT = OrbitNumber

OBJECT = StartOrbitNumber
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "INTEGER"
    NUM_VAL = 1
END_OBJECT = StartOrbitNumber

OBJECT = StopOrbitNumber
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "INTEGER"
    NUM_VAL = 1
END_OBJECT = StopOrbitNumber

OBJECT = EquatorCrossingLongitude
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "DOUBLE"
    NUM_VAL = 1
END_OBJECT = EquatorCrossingLongitude

OBJECT = EquatorCrossingTime
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "TIME"
    NUM_VAL = 1
END_OBJECT = EquatorCrossingTime

OBJECT = EquatorCrossingDate
    Data_Location = "PGE"
    Mandatory = "TRUE"
    Class = "M"
    TYPE = "DATE"
    NUM_VAL = 1
END_OBJECT = EquatorCrossingDate
```

```
        END_OBJECT = OrbitCalculatedSpatialDomainContainer
    END_GROUP = OrbitCalculatedSpatialDomain

/* CollectionDescriptionClass */
    GROUP = CollectionDescriptionClass

        OBJECT = ShortName
            Data_Location = "MCF"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
            Value = "xxxx"  /* Substitute actual ShortName for xxxx */
        END_OBJECT = ShortName

        OBJECT = VersionID
            Data_Location = "MCF"
            Mandatory = "TRUE"
            TYPE = "INTEGER"
            NUM_VAL = 1
            Value = xxxx  /* Substitute actual VersionID (in the range 0-255 ) for xxxx */
        END_OBJECT = VersionID

    END_GROUP = CollectionDescriptionClass

/* InputGranule */
    GROUP = InputGranule
        /* Because some PGEs may have on the order of a thousand    */
        /* input data granules, InputPointer is being implemented   */
        /* as an array of values and not as a Class = "M" ODL       */
        /* structure.                                               */
        /* In order to properly interface with SDP Toolkit routines */
        /* it is necessary that the MAX_NUM_INPUTPOINTERS shown     */
        /* here be replaced with the ESDT-specific value of the     */
        /* maximum number of input files for this ESDT.             */
        OBJECT = InputPointer
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = MAX_NUM_INPUTPOINTERS
        END_OBJECT = InputPointer
    END_GROUP = InputGranule
```

```
/* SpatialDomainContainer */
    GROUP = SpatialDomainContainer

      /*  GranuleLocality  */
        GROUP = GranuleLocality
            /* At the Granule-level, GranuleLocality consists only */
            /* of the LocalityValue attribute.                     */
            /* The implementation of LocalityValue is as an array  */
            /* of values and not as a Class = "M" ODL structure.   */
            /* In order to properly interface with the             */
            /* SDP Toolkit routines it is necessary that the       */
            /* MAX_NUM_LOCALITYVALUES shown here be replaced with  */
            /* the ESDT-specific value of the maximum possible     */
            /* number of LocalityValue instances for this ESDT.    */
            OBJECT = LocalityValue
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "STRING"
                NUM_VAL = MAX_NUM_LOCALITYVALUES
            END_OBJECT = LocalityValue
        END_GROUP = GranuleLocality

      /*  VerticalSpatialDomain  */
        GROUP = VerticalSpatialDomain
            OBJECT = VerticalSpatialDomainContainer

                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = VerticalSpatialDomainType
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = VerticalSpatialDomainType

                OBJECT = VerticalSpatialDomainValue
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
```

```
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = VerticalSpatialDomainValue

            END_OBJECT = VerticalSpatialDomainContainer
          END_GROUP = VerticalSpatialDomain


        /* HorizontalSpatialDomainContainer  */
          /* Note: HorizontalSpatialDomainContainer is not, strictly         */
          /*  speaking, a container object of multiple sets of values. This  */
          /*  attribute having 'Container' in its name is due to a naming    */
          /*  anomaly in the BNF and Data Model.                             */

          GROUP = HorizontalSpatialDomainContainer

            /*  ZoneIdentifierClass  */
              GROUP = ZoneIdentifierClass
                  OBJECT = ZoneIdentifier
                      Data_Location = "PGE"
                      Mandatory = "TRUE"
                      TYPE = "STRING"
                      NUM_VAL = 1
                  END_OBJECT = ZoneIdentifier
              END_GROUP = ZoneIdentifierClass

/*     Only one of GPolygon, Bounding Rectangle, Point or Circle are to    */
/*     permitted for a given collection.                                   */

            /*  GPolygon   */
              /* This is a Class = "M"  ODL structure which is needed in      */
              /* order to support multiple attribute values.                  */
              /* GRingPointLatitude, GRingPointLongitude and                  */
              /* GRingPointSequenceNo will be arrays of values that will be   */
              /* set by the science software.                                 */
              /* In order to properly interface with SDP Toolkit routines it  */
              /* is necessary that the MAX_NUM_GRING_POINTS shown here be     */
              /* replaced with the ESDT-specific value of the maximum         */
              /* possible number of GRing points for this ESDT.  There must   */
              /* be at least three GRing points in this ESDT's Spatial        */
              /* definition.                                                  */
              /*                                                              */
```

```
/* Note that while the BNF uses GPolygonContainer as the class  */
/* name, the example in App. J has the group name as GPolygon   */
/* and GPolygon used as the Class name here and in the          */
/* COLLECTIONMETADATA poertion of this template.                */

GROUP = GPolygon
    OBJECT = GPolygonContainer

        Data_Location = "NONE"
        Mandatory = "TRUE"
        Class = "M"

        GROUP = GRing

            Class = "M"

            OBJECT = ExclusionGRingFlag
                Data_Location = "PGE"
                Mandatory = "TRUE"
                NUM_VAL = 1
                TYPE = "STRING"
            END_OBJECT = ExclusionGRingFlag

        END_GROUP = GRing

        GROUP = GRingPoint

            Class = "M"

            OBJECT = GRingPointLatitude
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "DOUBLE"
                NUM_VAL = MAX_NUM_GRING_POINTS
            END_OBJECT = GRingPointLatitude

            OBJECT = GRingPointLongitude
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "DOUBLE"
                NUM_VAL = MAX_NUM_GRING_POINTS
            END_OBJECT = GRingPointLongitude
```

```
                    OBJECT = GRingPointSequenceNo
                        Data_Location = "PGE"
                        Mandatory = "TRUE"
                        TYPE = "INTEGER"
                        NUM_VAL = MAX_NUM_GRING_POINTS
                    END_OBJECT = GRingPointSequenceNo

                END_GROUP = GRingPoint

            END_OBJECT = GPolygonContainer
        END_GROUP = GPolygon

    /*  BoundingRectangle  */
        GROUP = BoundingRectangle
            OBJECT = WestBoundingCoordinate
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "DOUBLE"
                NUM_VAL = 1
            END_OBJECT = WestBoundingCoordinate

            OBJECT = NorthBoundingCoordinate
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "DOUBLE"
                NUM_VAL = 1
            END_OBJECT = NorthBoundingCoordinate

            OBJECT = EastBoundingCoordinate
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "DOUBLE"
                NUM_VAL = 1
            END_OBJECT = EastBoundingCoordinate

            OBJECT = SouthBoundingCoordinate
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "DOUBLE"
                NUM_VAL = 1
            END_OBJECT = SouthBoundingCoordinate
```

```
  END_GROUP = BoundingRectangle

/*   Point   */
  GROUP = Point
      OBJECT = PointLongitude
          Data_Location = "PGE"
          Mandatory = "TRUE"
          TYPE = "DOUBLE"
          NUM_VAL = 1
      END_OBJECT = PointLongitude

      OBJECT = PointLatitude
          Data_Location = "PGE"
          Mandatory = "TRUE"
          TYPE = "DOUBLE"
          NUM_VAL = 1
      END_OBJECT = PointLatitude
  END_GROUP = Point

/*   Circle  */
  GROUP = Circle
      OBJECT = CenterLatitude
          Data_Location = "PGE"
          Mandatory = "TRUE"
         TYPE = "DOUBLE"
          NUM_VAL = 1
       END_OBJECT = CenterLatitude

      OBJECT = CenterLongitude
          Data_Location = "PGE"
          Mandatory = "TRUE"
          TYPE = "DOUBLE"
          NUM_VAL = 1
      END_OBJECT = CenterLongitude

      OBJECT = RadiusValue
          Data_Location = "PGE"
          Mandatory = "TRUE"
          TYPE = "DOUBLE"
          NUM_VAL = 1
      END_OBJECT = RadiusValue
```

```
                OBJECT = RadiusUnits
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = RadiusUnits
            END_GROUP = Circle

        END_GROUP = HorizontalSpatialDomainContainer

    END_GROUP = SpatialDomainContainer

/* RangeDateTime | SingleDateTime */
/* Specify either a single date/time or date/time range, but not both */

/* SingleDateTime  */
    GROUP = SingleDateTime

        OBJECT = TimeofDay
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "TIME"
            NUM_VAL = 1
        END_OBJECT = TimeofDay

        OBJECT = CalendarDate
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "DATE"
            NUM_VAL = 1
        END_OBJECT = CalendarDate

    END_GROUP = SingleDateTime

/* RangeDateTime  */
    GROUP = RangeDateTime

        OBJECT = RangeBeginningTime
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "TIME"
            NUM_VAL = 1
```

```
        END_OBJECT = RangeBeginningTime

        OBJECT = RangeEndingTime
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "TIME"
            NUM_VAL = 1
        END_OBJECT = RangeEndingTime

        OBJECT = RangeBeginningDate
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "DATE"
            NUM_VAL = 1
        END_OBJECT = RangeBeginningDate

        OBJECT = RangeEndingDate
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "DATE"
            NUM_VAL = 1
        END_OBJECT = RangeEndingDate

    END_GROUP = RangeDateTime

/* PGEVersionClass */
    GROUP = PGEVersionClass
        OBJECT = PGEVersion
            Mandatory = "TRUE"
            Data_Location = "PGE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = PGEVersion
    END_GROUP = PGEVersionClass

/* AncillaryInputGranule */
    /* The B.0 BNF lists  0{AncillaryInputGranule}n, which      */
    /* further breaks down to the attributes:                   */
    /*     0{AncillaryInputType + AncillaryInputPointer}n       */
        GROUP = AncillaryInputGranule
            OBJECT = AncillaryInputGranuleContainer
```

```
                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = AncillaryInputType
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = AncillaryInputType

                OBJECT = AncillaryInputPointer
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = AncillaryInputPointer

            END_OBJECT = AncillaryInputGranuleContainer
        END_GROUP = AncillaryInputGranule

/* Review */
        GROUP = Review
            OBJECT = ReviewContainer

                Data_Location = "NONE"
                Class = "M"
                Mandatory = "TRUE"

                OBJECT = ScienceReviewDate
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "DATE"
                    NUM_VAL = 1
                END_OBJECT = ScienceReviewDate

                OBJECT = ScienceReviewStatus
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
```

```
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = ScienceReviewStatus

                OBJECT = FutureReviewDate
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "DATE"
                    NUM_VAL = 1
                END_OBJECT = FutureReviewDate

            END_OBJECT = ReviewContainer
        END_GROUP = Review


/* ProcessingQA */
        GROUP = ProcessingQA
            OBJECT = ProcessingQAContainer

                Data_Location = "NONE"
                Class = "M"
                Mandatory = "TRUE"

                OBJECT = ProcessingQADescription
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = ProcessingQADescription

                OBJECT = ProcessingQAAttribute
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = ProcessingQAAttribute

            END_OBJECT = ProcessingQAContainer
```

```
    END_GROUP = ProcessingQA

/*   NOTE: The following block of ODL for AdditionalAttributes is     */
/*   commented out in this ESDT descriptor file template.  This       */
/*   indicates that, while this information should not appear in an   */
/*   actual ESDT descriptor file, this block ODL must appear in any   */
/*   MCF that is generated from an ESDT's INVENTORYMETADATA           */
/*   section in place of the GROUP = ProductSpecficMetadata in the    */
/*   ESDT descriptor file, if any product-specific will be set for    */
/*   the given ESDT.  The GROUP = ProductSpecficMetadata ODL appears  */
/*   in ESDT descriptor files, but not in MCFs. The text between the  */
/*   'Begin MCF ODL block' and 'End MCF ODL block' comment lines must */
/*   be used by either Data Server or the MetaDataWorks tool when a   */
/*   MCF is generated from an ESDT's INVENTORYMETADATA section, if    */
/*   product-specific attributes will be set by science software for  */
/*   granules corresponding to that ESDT. This AddtionalAttributes    */
/*   ODL must exist within MCFs if the SDP Toolkit APIs are to be     */
/*   used to successfully set product-specific attributes.            */
/*                                                                    */
/* At the Granule-level AdditionalAttributes consists only of the     */
/* AdditionalAttributeName attribute; this means that the             */
/* COLLECTIONMETADATA section must contain corresponding definitions  */
/* of AdditionalAttributeDescription & AdditionalAttributeDatatype    */
/* for this specific AdditionalAttributeName.                         */
/*   It is necessary to include NUM_VAL information for the component */
/* attribute ParameterValue in order to supply the information        */
/* needed by SDP Toolkit routines.                                    */
/*   The NUM_VAL = MAX_NUM_PARAMETERVALUE must be replaced with the   */
/* ESDT-specific value of the maximum possible number of Granule-     */
/* level ParameterValue instances for this ESDT.                      */

/*************** Begin MCF ODL block *********************/
/*    GROUP = AdditionalAttributes                        */
/*        OBJECT = AdditionalAttributesContainer          */
/*                                                        */
/*           Data_Location = "NONE"                       */
/*           Class = "M"                                  */
/*           Mandatory = "TRUE"                           */
/*                                                        */
/*            /*  AdditionalAttributes  */                */
/*            OBJECT = AdditionalAttributeName            */
/*                Data_Location = "PGE"                   */
```

```
/*                Mandatory = "TRUE"                        */
/*                Class = "M"                               */
/*                TYPE = "STRING"                           */
/*                NUM_VAL = 1                               */
/*            END_OBJECT = AdditionalAttributeName          */
/*                                                          */
/*            /*  InformationContent  */                   */
/*            GROUP = InformationContent                    */
/*                                                          */
/*                Class = "M"                               */
/*                                                          */
/*                OBJECT = ParameterValue                   */
/*                    Data_Location = "PGE"                 */
/*                    Mandatory = "TRUE"                    */
/*                    TYPE = "STRING"                       */
/*                    NUM_VAL = MAX_NUM_PARAMETERVALUE      */
/*                END_OBJECT = ParameterValue               */
/*                                                          */
/*            END_GROUP = InformationContent                */
/*                                                          */
/*        END_OBJECT = AdditionalAttributesContainer        */
/*    END_GROUP = AdditionalAttributes                      */
/*************** End MCF ODL block ************************/


    /* The ProductSpecificMetadata section is a list of the   */
    /* actual Product-Specific attributes that may be set for */
    /* a given granule of this ESDT. This section will be     */
    /* parsed by Data Server, but will not appear in any MCF  */
    /* generated from an ESDT's INVENTORYMETADATA section.    */
    GROUP = ProductSpecificMetadata

/*        OBJECT = AverageRaindropSize              */
/*            Data_Location = "MCF"                 */
/*            Mandatory = "TRUE"                    */
/*            TYPE = FLOAT                          */
/*            LENGTH = "10"                         */
/*            MAXOCCURRENCES = "1"                  */
/*            VALIDRULE = "Range(0.0, 350.0)"       */
/*        END_OBJECT = AverageRaindropSize          */

    END_GROUP = ProductSpecificMetadata
```

```
     /*  OrbitParametersGranule  */
        /* OrbitParametersGranule will not be set by the   */
        /* science software but needs to appear in         */
        /* INVENTORYMETADATA anyway since SDP Toolkit      */
        /* functionality will set this the value of this   */
        /* attribute after the completion of the science   */
        /* software processing.  OrbitParametersPointer    */
        /* will be represented as an array of values and   */
        /* not as a Class = "M" ODL structure.             */
        GROUP = OrbitParametersGranule

            OBJECT = OrbitParametersPointer
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "STRING"
                NUM_VAL =  MAX_NUM_ORBITPARAMETERSPOINTERS
            END_OBJECT = OrbitParametersPointer

        END_GROUP = OrbitParametersGranule


/* StorageMediumClass */
    /* StorageMediumClass consists only of the StorageMedium */
    /* attribute. The StorageMedium attribute is being       */
    /* implemented as an array of values and not as a        */
    /* Class = "M" ODL structure. In order to properly       */
    /* interface with SDP Toolkit routines it is necessary   */
    /* that the MAX_NUM_STORAGEMEDIUM shown here be replaced */
    /* with the ESDT-specific value of the maximum possible  */
    /* number of StorageMedium instances for this ESDT.      */
        GROUP = StorageMediumClass
            OBJECT = StorageMedium
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "STRING"
                NUM_VAL = MAX_NUM_STORAGEMEDIUM
            END_OBJECT = StorageMedium
        END_GROUP = StorageMediumClass

/* AnalysisSource */
    /* AnalysisShortName is being implemented as an   */
```

```
    /* array of values and not as a Class = "M"       */
    /* ODL structure. In order to properly interface  */
    /* with SDP Toolkit routines it is necessary that */
    /* the MAX_NUM_ANALYSISSHORTNAME shown here be    */
    /* replaced with the ESDT-specific value of the   */
    /* maximum possible number of AnalysisShortName   */
    /* instances for this ESDT.                       */
        GROUP = AnalysisSource
            OBJECT = AnalysisShortName
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "STRING"
                NUM_VAL = MAX_NUM_ANALYSISSHORTNAME
            END_OBJECT = AnalysisShortName
        END_GROUP = AnalysisSource

/* Campaign */
    /* CampaignShortName is being implemented as an      */
    /* array of values and not as a Class = "M"          */
    /* ODL structure. In order to properly interface     */
    /* with SDP Toolkit routines it is necessary that    */
    /* the MAX_NUM_CAMPAIGNSHORTNAME shown here be       */
    /* replaced with the ESDT-specific value of the      */
    /* maximum possible number of CampaignShortName      */
    /* instances for this ESDT.                          */
        GROUP = Campaign
            OBJECT = CampaignShortName
                Data_Location = "PGE"
                Mandatory = "TRUE"
                TYPE = "STRING"
                NUM_VAL = MAX_NUM_CAMPAIGNSHORTNAME
            END_OBJECT = CampaignShortName
        END_GROUP = Campaign

  /* The B.0 ESDT descriptor file template implementation of        */
  /* populating SensorCharacteristic attributes is to populate      */
  /* 0-to-n sets of the following attributes:                       */

        GROUP = SensorCharacteristic
            OBJECT = SensorCharacteristicContainer

                Data_Location = "NONE"
```

```
Mandatory = "TRUE"
Class = "M"

OBJECT = PlatformShortName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    /* The ordinal number of the  */
    /* SensorCharacteristicContainer will replace M  */
    Class = "M"
    TYPE = "STRING"
    NUM_VAL = 1
END_OBJECT = PlatformShortName

OBJECT = InstrumentShortName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    /* The ordinal number of the  */
    /* SensorCharacteristicContainer will replace M  */
    Class = "M"
    TYPE = "STRING"
    NUM_VAL = 1
END_OBJECT = InstrumentShortName

OBJECT = SensorShortName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    /* The ordinal number of  */
    /* the SensorCharacteristicContainer will replace M  */
    Class = "M"
    TYPE = "STRING"
    NUM_VAL = 1
END_OBJECT = SensorShortName

OBJECT = SensorCharacteristicName
    Data_Location = "PGE"
    Mandatory = "TRUE"
    /* The ordinal number of the */
    /* SensorCharacteristicContainer will replace M */
    Class = "M"
    TYPE = "STRING"
    NUM_VAL = 1
END_OBJECT = SensorCharacteristicName
```

```
                OBJECT = SensorCharacteristicValue
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    /* The ordinal number of the */
                    /* SensorCharacteristicContainer will replace M */
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = SensorCharacteristicValue

            END_OBJECT = SensorCharacteristicContainer
        END_GROUP = SensorCharacteristic

  /* The B.0 ESDT descriptor file template implementation of populating */
  /* OperationMode attributes is to populate 0-to-n sets of the         */
  /* following attributes:                                              */

        GROUP = AssociatedPlatformInstrumentSensor
            OBJECT = AssociatedPlatformInstrumentSensorContainer

                Data_Location = "NONE"
                Mandatory = "TRUE"
                Class = "M"

                OBJECT = AssociatedPlatformShortName
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    /* The ordinal number of the  */
                    /* AssociatedPlatformInstrumentSensorContainer will replace M  */
                    Class = "M"
                    TYPE = "STRING"
                    NUM_VAL = 1
                END_OBJECT = AssociatedPlatformShortName

                OBJECT = AssociatedInstrumentShortName
                    Data_Location = "PGE"
                    Mandatory = "TRUE"
                    /* The ordinal number of the  */
                    /* AssociatedPlatformInstrumentSensorContainer will replace M  */
                    Class = "M"
                    TYPE = "STRING"
```

```
                NUM_VAL = 1
            END_OBJECT = AssociatedInstrumentShortName

            OBJECT = AssociatedSensorShortName
                Data_Location = "PGE"
                Mandatory = "TRUE"
                /* The ordinal number of the  */
                /* AssociatedPlatformInstrumentSensorContainer will replace M  */
                Class = "M"
                TYPE = "STRING"
                NUM_VAL = 1
            END_OBJECT = AssociatedSensorShortName

            OBJECT = OperationMode
                Data_Location = "PGE"
                Mandatory = "TRUE"
                /* The ordinal number of the  */
                /* AssociatedPlatformInstrumentSensorContainer will replace M  */
                Class = "M"
                TYPE = "STRING"
                NUM_VAL = 1
            END_OBJECT = OperationMode

        END_OBJECT = AssociatedPlatformInstrumentSensorContainer
    END_GROUP = AssociatedPlatformInstrumentSensor


 /* The ECS system ESDTs for ShortNames DAP, AP and SSAPC contain Granule-  */
 /* level Classes and attributes which are unique to those data types and   */
 /* do not appear in descriptor files of other ESDTs.  The attributes and   */
 /* Data Model Classes which are specific to these three ESDTs are provided */
 /* below.                                                                  */

/*************** Begin DAP-specific ODL block **********************/
    OBJECT = DAPID
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING"
        NUM_VAL = 1
    END_OBJECT = DAPID

    OBJECT = DAPInsertDate
```

```
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "DATE"
            NUM_VAL = 1
        END_OBJECT = DAPInsertDate

        GROUP = PGEGroups

           OBJECT = PGEGroupContainer

               Data_Location = "NONE"
               Mandatory = "TRUE"
               Class = "M"

               OBJECT = DAPPGEName
                   Data_Location = "PGE"
                   Mandatory = "TRUE"
                   Class = "M"
                   TYPE = "STRING"
                   NUM_VAL = 1
               END_OBJECT = DAPPGEName

               OBJECT = DAPPGEVersion
                   Data_Location = "PGE"
                   Mandatory = "TRUE"
                   Class = "M"
                   TYPE = "STRING"
                   NUM_VAL = 1
               END_OBJECT = DAPPGEVersion

               OBJECT = DAPSWVersion
                   Data_Location = "PGE"
                   Mandatory = "TRUE"
                   Class = "M"
                   TYPE = "STRING"
                   NUM_VAL = 1
               END_OBJECT = DAPSWVersion

           END_OBJECT = PGEGroupContainer

       END_GROUP = PGEGroups
    /*************** End DAP-specific ODL block ***********************/
```

```
/*************** Begin AP-specific ODL block ***********************/
    OBJECT = AlgorithmPackageName
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING"
        NUM_VAL = 1
    END_OBJECT = AlgorithmPackageName

    OBJECT = AlgorithmPackageVersion
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING"
        NUM_VAL = 1
    END_OBJECT = AlgorithmPackageVersion

    OBJECT = AlgorithmPackageMaturityCode
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING"
        NUM_VAL = 1
    END_OBJECT = AlgorithmPackageMaturityCode

    OBJECT = AlgorithmPackageAcceptanceDate
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "DATETIME"
        NUM_VAL = 1
    END_OBJECT = AlgorithmPackageAcceptanceDate

    OBJECT = DeliveryPurpose
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING"
        NUM_VAL = 1
    END_OBJECT = DeliveryPurpose

    OBJECT = PGEName
        Data_Location = "PGE"
        Mandatory = "TRUE"
        TYPE = "STRING"
        NUM_VAL = 1
```

```
END_OBJECT = PGEName

OBJECT = PGEVersion
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING"
    NUM_VAL = 1
END_OBJECT = PGEVersion

OBJECT = PGEIdentifier
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING"
    NUM_VAL = 1
 END_OBJECT = PGEIdentifier

OBJECT = PGEFunction
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING"
    NUM_VAL = 1
END_OBJECT = PGEFunction

OBJECT = PGEDateLastModified
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DATETIME"
    NUM_VAL = 1
END_OBJECT = PGEDateLastModified

OBJECT = SWVersion
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "STRING"
    NUM_VAL = 1
END_OBJECT = SWVersion

OBJECT = SWDateLastModified
    Data_Location = "PGE"
    Mandatory = "TRUE"
    TYPE = "DATETIME"
    NUM_VAL = 1
```

```
        END_OBJECT = SWDateLastModified

        GROUP = AssociatedCollections

           OBJECT = AssociatedCollectionContainer


               Data_Location = "NONE"
               Mandatory = "TRUE"
               Class = "M"

               OBJECT = APCollectionShortName
                   Data_Location = "PGE"
                   Mandatory = "TRUE"
                   Class = "M"
                   TYPE = "STRING"
                   NUM_VAL = 1
               END_OBJECT = APCollectionShortName

               OBJECT = APCollectionVersionID
                   Data_Location = "PGE"
                   Mandatory = "TRUE"
                   Class = "M"
                   TYPE = "STRING"
                   NUM_VAL = 1
               END_OBJECT = APCollectionVersionID

           END_OBJECT = AssociatedCollectionContainer
        END_GROUP = AssociatedCollections
    /*************** End AP-specific ODL block ************************/

    /*************** Begin SSAPC-specific ODL block *******************/
        OBJECT = ComponentType
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = ComponentType

        OBJECT = ComponentName
            Data_Location = "PGE"
            Mandatory = "TRUE"
```

```
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = ComponentName

        OBJECT = SSAPAlgorithmPackageName
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "STRING"
            NUM_VAL = 1
        END_OBJECT = SSAPAlgorithmPackageName

        OBJECT = SSAPInsertDate
            Data_Location = "PGE"
            Mandatory = "TRUE"
            TYPE = "DATETIME"
            NUM_VAL = 1
        END_OBJECT = SSAPInsertDate

        GROUP = AlgorithmPackageVersions

           OBJECT = AlgorithmPackageVersionContainer

               Data_Location = "NONE"
               Mandatory = "TRUE"
               Class = "M"

               OBJECT = SSAPAlgPackageVersion
                   Data_Location = "PGE"
                   Mandatory = "TRUE"
                   Class = "M"
                   TYPE = "STRING"
                   NUM_VAL = 1
               END_OBJECT = SSAPAlgPackageVersion

           END_OBJECT = AlgorithmPackageVersionContainer
        END_GROUP = AlgorithmPackageVersions
    /*************** End SSAPC-specific ODL block **********************/


    END_GROUP = INVENTORYMETADATA

/*  PGEs can write non-inventory metadata groups (e.g., ARCHIVEDMETADATA)*/
```

```
/*  to HDF and HDF-EOS product files.  The ODL describing these metadata */
/*  must appear within the UNPARSEDMETADATA group description below in   */
/*  order for it to appear in the Science Data Server-generated MCF file */
/*  so the SDP Toolkit Metadata Tools can be used to set the attribute   */
/*  values                                                               */

    GROUP = UNPARSEDMETADATA
        /*  GROUP = ARCHIVEDMETADATA                                     */
        /*     GROUPTYPE = MASTERGROUP                                   */
              /*  the ODL descriptions for this MASTERGROUP             */
        /*  END_GROUP = ARCHIVEDMETADATA                                 */
    END_GROUP = UNPARSEDMETADATA

END_GROUP = METADATA

    /* ESDT Services */
GROUP = SERVICE

    /* The Acquire Service */
    OBJECT = ACQUIRE
    CHECK_EXTRA = TRUE
    CHECK_ORDER = FALSE                /*  Only TRUE for Billing   */
    OBJECT = DDISTMEDIATYPE
        MANDATORY = TRUE
        NUM_VAL = 7
        VALUELIST = ("FtpPush", "FtpPull", "8MM", "4MM", "9TRK", "CDROM", "D3")
    END_OBJECT = DDISTMEDIATYPE

        OBJECT = DDISTMEDIAFMT
            MANDATORY = FALSE
            VALUELIST = "FILEFMT"
            DEPENDENCY = "DDISTMEDIATYPE"
                         NUM_DEPENDENCY_VALUES = 3
            DEPENDENCY_VALUES = ("FtpPush", "FtpPull", "CDROM")
        END_OBJECT = DDISTMEDIAFMT
        OBJECT = DDISTMEDIAFMT
            MANDATORY = FALSE
            VALUELIST = "TARFMT"
            DEPENDENCY = "DDISTMEDIATYPE"
                         NUM_DEPENDENCY_VALUES = 4
            DEPENDENCY_VALUES = ("4MM", "8MM", "9TRK", "D3")
        END_OBJECT = DDISTMEDIAFMT
```

```
OBJECT = ECSUSERPROFILE
    MANDATORY = FALSE
END_OBJECT = ECSUSERPROFILE

OBJECT = ORDERID
    MANDATORY = FALSE
END_OBJECT = ORDERID

OBJECT = REQUESTID
    MANDATORY = TRUE
END_OBJECT = REQUESTID

OBJECT = DDISTNOTIFYTYPE
    MANDATORY = FALSE
    NUM_VAL = 2
    VALUELIST = ("MAIL", "LIST")
END_OBJECT = DDISTNOTIFYTYPE

OBJECT = FTPUSER
    MANDATORY = FALSE
    DEPENDENCY = "DDISTMEDIATYPE"
    NUM_DEPENDENCY_VALUES = 1
    DEPENDENCY_VALUES = "FtpPush"
END_OBJECT = FTPUSER

OBJECT = FTPPASSWORD
    MANDATORY = FALSE
    DEPENDENCY = "DDISTMEDIATYPE"
    NUM_DEPENDENCY_VALUES = 1
    DEPENDENCY_VALUES = "FtpPush"
END_OBJECT = FTPPASSWORD

OBJECT = FTPHOST
    MANDATORY = FALSE
    DEPENDENCY = "DDISTMEDIATYPE"
    NUM_DEPENDENCY_VALUES = 1
    DEPENDENCY_VALUES = "FtpPush"
END_OBJECT = FTPHOST

OBJECT = FTPPUSHDEST
    MANDATORY = FALSE
```

```
        DEPENDENCY = "DDISTMEDIATYPE"
        NUM_DEPENDENCY_VALUES = 1
        DEPENDENCY_VALUES = "FtpPush"
    END_OBJECT = FTPPUSHDEST

    OBJECT = NOTIFY
        MANDATORY = FALSE
    END_OBJECT = NOTIFY

    OBJECT = SITE
        MANDATORY = FALSE
    END_OBJECT = SITE

    OBJECT = UserString
        MANDATORY = FALSE
    END_OBJECT = UserString

        ADVERTISED = TRUE
    END_OBJECT = ACQUIRE

    /* The Insert Service */
    OBJECT = INSERT
        CHECK_EXTRA = TRUE

        OBJECT = SHORTNAME
            MANDATORY = TRUE
        END_OBJECT = SHORTNAME

        OBJECT = VERSIONID
            MANDATORY = FALSE
        END_OBJECT = VERSIONID

    /*To be added in B.1*/
    /*OBJECT = COMPRESSION_FLAG*/
        /*MANDATORY = FALSE*/
    /*END_OBJECT = COMPRESSION_FLAG*/

        OBJECT = MAINGROUP
            MANDATORY = TRUE

            OBJECT = SHORTNAME
                MANDATORY = TRUE
```

```
            END_OBJECT = SHORTNAME

            OBJECT = VERSIONID
                MANDATORY = FALSE
            END_OBJECT = VERSIONID

            OBJECT = METAFILEGROUP
                MANDATORY = TRUE

                OBJECT = METADATAFILE
                    MANDATORY = TRUE
                END_OBJECT = METADATAFILE
            END_OBJECT = METAFILEGROUP

            OBJECT = DATAFILEGROUP
                MANDATORY = TRUE

                OBJECT = DATAFILE
                    MANDATORY = TRUE
                END_OBJECT = DATAFILE

                OBJECT = FILETYPE
                    MANDATORY = FALSE
                END_OBJECT = FILETYPE
            END_OBJECT = DATAFILEGROUP
        END_OBJECT = MAINGROUP

        OBJECT = BROWSEGROUP
            MANDATORY = FALSE

            OBJECT = SHORTNAME
                MANDATORY = TRUE
            END_OBJECT = SHORTNAME

            OBJECT = VERSIONID
                MANDATORY = FALSE
            END_OBJECT = VERSIONID

            OBJECT = METAFILEGROUP
                MANDATORY = TRUE

                OBJECT = METADATAFILE
```

```
                MANDATORY = TRUE
            END_OBJECT = METADATAFILE
        END_OBJECT = METAFILEGROUP

        OBJECT = DATAFILEGROUP
            MANDATORY = TRUE

            OBJECT = DATAFILE
                MANDATORY = TRUE
            END_OBJECT = DATAFILE

            OBJECT = FILETYPE
                MANDATORY = FALSE
            END_OBJECT = FILETYPE
        END_OBJECT = DATAFILEGROUP
    END_OBJECT = BROWSEGROUP

    OBJECT = QA
        MANDATORY = FALSE

        OBJECT = SHORTNAME
            MANDATORY = TRUE
        END_OBJECT = SHORTNAME

        OBJECT = VERSIONID
            MANDATORY = FALSE
        END_OBJECT = VERSIONID

        OBJECT = METAFILEGROUP
            MANDATORY = TRUE

            OBJECT = METADATAFILE
                MANDATORY = TRUE
            END_OBJECT = METADATAFILE
        END_OBJECT = METAFILEGROUP

        OBJECT = DATAFILEGROUP
            MANDATORY = TRUE

            OBJECT = DATAFILE
                MANDATORY = TRUE
            END_OBJECT = DATAFILE
```

```
            OBJECT = FILETYPE
                MANDATORY = FALSE
            END_OBJECT = FILETYPE
        END_OBJECT = DATAFILEGROUP
    END_OBJECT = QA

    OBJECT = PH
        MANDATORY = FALSE

        OBJECT = SHORTNAME
            MANDATORY = TRUE
        END_OBJECT = SHORTNAME

        OBJECT = VERSIONID
            MANDATORY = FALSE
        END_OBJECT = VERSIONID

        OBJECT = METAFILEGROUP
            MANDATORY = TRUE

            OBJECT = METADATAFILE
                MANDATORY = TRUE
            END_OBJECT = METADATAFILE
        END_OBJECT = METAFILEGROUP

        OBJECT = DATAFILEGROUP
            MANDATORY = TRUE

            OBJECT = DATAFILE
                MANDATORY = TRUE
            END_OBJECT = DATAFILE

            OBJECT = FILETYPE
                MANDATORY = FALSE
            END_OBJECT = FILETYPE
        END_OBJECT = DATAFILEGROUP
    END_OBJECT = PH

    OBJECT = LISTOFURS
        MANDATORY = FALSE
```

```
            OBJECT = UR
                MANDATORY = TRUE
            END_OBJECT = UR
        END_OBJECT = LISTOFURS

        ADVERTISED = TRUE
    END_OBJECT = INSERT

    /* The Update Metadata Service */
    OBJECT = UPDATEMETADATA
        ADVERTISED = TRUE
    END_OBJECT = UPDATEMETADATA

    /* The Browse Service */
    OBJECT = BROWSE
        ADVERTISED = TRUE
    END_OBJECT = BROWSE

    /* The Get Queryable Parameter Service */
    OBJECT = GETQUERYABLEPARAMETERS
        ADVERTISED = TRUE

        OBJECT = METADATATYPE
            MANDATORY = FALSE
        END_OBJECT = METADATATYPE
    END_OBJECT = GETQUERYABLEPARAMETERS

    /* The Inspect Service */
    OBJECT = INSPECT
        ADVERTISED = TRUE

        OBJECT = METADATATYPE
            MANDATORY = FALSE
        END_OBJECT = METADATATYPE
    END_OBJECT = INSPECT

    /* The Inspect Collection Level service */
    OBJECT = INSPECTCL
        ADVERTISED = TRUE

        OBJECT = METADATATYPE
            MANDATORY = FALSE
```

```
        END_OBJECT = METADATATYPE
    END_OBJECT = INSPECTCL

    /*The Delete service (deletes a granule)*/
    OBJECT = DELETE
        ADVERTISED = TRUE
    END_OBJECT = DELETE

    /* The Delete From Archive service (deletes a granule but not metadata) */
    /* Optional service */
    OBJECT = DELETEFROMARCHIVE
        ADVERTISED = TRUE
    END_OBJECT = DELETEFROMARCHIVE

    /*The service for extracting information by Altitude (only)*/
    OBJECT = EXTRACTALT
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE

        OBJECT = ALTINTERVALGROUP
            MANDATORY = FALSE
        OBJECT = ALTINTERVAL
             MANDATORY = FALSE
             OBJECT = ALTSTART
                    MANDATORY = FALSE
                END_OBJECT = ALTSTART
         OBJECT = ALTSTOP
                MANDATORY = FALSE
                 END_OBJECT = ALTSTOP
        END_OBJECT = ALTINTERVAL
        END_OBJECT = ALTINTERVALGROUP

        OBJECT = ALTLEVELNAMEGROUP
            MANDATORY = FALSE
        OBJECT = ALTLEVELNAME
             MANDATORY = FALSE
        END_OBJECT = ALTLEVELNAME
        END_OBJECT = ALTLEVELNAMEGROUP

    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
```

```
    END_OBJECT = EXTRACTALT

/*The service for extracting information by Area (only) by bounding box*/
    OBJECT = EXTRACTAREABB
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE
        OBJECT = BOUNDINGBOXGROUP
            MANDATORY = TRUE
        OBJECT = BOUNDINGBOX
            Mandatory = TRUE

        OBJECT = UPPERLEFTLAT
               MANDATORY = TRUE
        END_OBJECT = UPPERLEFTLAT

        OBJECT = UPPERLEFTLONG
               MANDATORY = TRUE
        END_OBJECT = UPPERLEFTLONG

        OBJECT = LOWERRIGHTLAT
                MANDATORY = TRUE
            END_OBJECT = LOWERRIGHTLAT

        OBJECT = LOWERRIGHTLONG
           MANDATORY = TRUE
        END_OBJECT = LOWERRIGHTLONG

        END_OBJECT = BOUNDINGBOX
    END_OBJECT = BOUNDINGBOXGROUP

    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTAREABB

/*The service for extracting information by Area (only) by WRS Row, Path*/
    OBJECT = EXTRACTAREAWRS
        ADVERTISED = TRUE
        OBJECT = WRSGROUP
                MANDATORY = TRUE
            OBJECT = WRS
                MANDATORY = TRUE
```

```
                OBJECT = WRSROW
            MANDATORY = TRUE
            END_OBJECT = WRSROW
                OBJECT = WRSPATH
            MANDATORY = TRUE
            END_OBJECT = WRSPATH
            END_OBJECT = WRS
    END_OBJECT = WRSGROUP
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTAREAWRS

/*The service for extracting information by Parameter (only)*/
    OBJECT = EXTRACTPARAMETER
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE
    /*Parameters, either ECSParameterKeywords or Cl PS Parameters*/
        OBJECT = SUBSETPARAMETERGROUP
            MANDATORY = TRUE
        OBJECT = SUBSETPARAMETER
                MANDATORY = FALSE
        END_OBJECT = SUBSETPARAMETER
    END_OBJECT = SUBSETPARAMETERGROUP
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTPARAMETER

/*The service for extracting information by Time (only)*/
    OBJECT = EXTRACTTIME
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE
    OBJECT = TIMEINTERVALGROUP
        MANDATORY = TRUE
        OBJECT = RANGEBEGINNINGTIME
           MANDATORY = TRUE
        END_OBJECT = RANGEBEGINNINGTIME

        OBJECT = RANGEENDINGTIME
           MANDATORY = TRUE
        END_OBJECT = RANGEENDINGTIME
```

```
        OBJECT = RANGEBEGINNINGDATE
           MANDATORY = TRUE
        END_OBJECT = RANGEBEGINNINGDATE

        OBJECT = RANGEENDINGDATE
           MANDATORY = TRUE
        END_OBJECT = RANGEENDINGDATE

    END_OBJECT = TIMEINTERVALGROUP

    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTTIME

/*The service for extracting information by Rows (Swath products only)*/
    OBJECT = EXTRACTROW
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE
        OBJECT = ROWINTERVALGROUP
            MANDATORY = TRUE
        OBJECT = ROWINTERVAL
             MANDATORY = TRUE
            OBJECT = STARTROW
                   MANDATORY = TRUE
            END_OBJECT = STARTROW
                OBJECT = STOPROW
                   MANDATORY = TRUE
                    END_OBJECT = STOPROW
        END_OBJECT = ROWINTERVAL
        END_OBJECT = ROWINTERVALGROUP
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTROW

/*The service for extracting information by multiple means, area by*/
/*WRS Row, Path*/
    OBJECT = EXTRACTMULTIWRS
        ADVERTISED = TRUE
        CHECK_EXTRA = TRUE
```

```
        OBJECT = WRSGROUP
                MANDATORY = FALSE
            OBJECT = WRS
                MANDATORY = TRUE
                OBJECT = WRSROW
            MANDATORY = TRUE
            END_OBJECT = WRSROW
                OBJECT = WRSPATH
            MANDATORY = TRUE
            END_OBJECT = WRSPATH
            END_OBJECT = WRS
    END_OBJECT = WRSGROUP
    OBJECT = TIMEINTERVALGROUP
        MANDATORY = FALSE
        OBJECT = RANGEBEGINNINGTIME
           MANDATORY = TRUE
        END_OBJECT = RANGEBEGINNINGTIME

        OBJECT = RANGEENDINGTIME
           MANDATORY = TRUE
        END_OBJECT = RANGEENDINGTIME

        OBJECT = RANGEBEGINNINGDATE
           MANDATORY = TRUE
        END_OBJECT = RANGEBEGINNINGDATE

        OBJECT = RANGEENDINGDATE
           MANDATORY = TRUE
        END_OBJECT = RANGEENDINGDATE
    END_OBJECT = TIMEINTERVALGROUP

        OBJECT = ALTINTERVALGROUP
            MANDATORY = FALSE
        OBJECT = ALTINTERVAL
             MANDATORY = TRUE
             OBJECT = ALTSTART
                    MANDATORY = TRUE
                  END_OBJECT = ALTSTART
         OBJECT = ALTSTOP
                MANDATORY = TRUE
                 END_OBJECT = ALTSTOP
        END_OBJECT = ALTINTERVAL
```

```
        END_OBJECT = ALTINTERVALGROUP

        OBJECT = ALTLEVELNAMEGROUP
            MANDATORY = FALSE
        OBJECT = ALTLEVELNAME
             MANDATORY = TRUE
        END_OBJECT = ALTLEVELNAME
        END_OBJECT = ALTLEVELNAMEGROUP

        OBJECT = SUBSETPARAMETERGROUP
            MANDATORY = FALSE
        OBJECT = SUBSETPARAMETER
                MANDATORY = TRUE
        END_OBJECT = SUBSETPARAMETER
    END_OBJECT = SUBSETPARAMETERGROUP
        OBJECT = ROWINTERVALGROUP
            MANDATORY = FALSE
        OBJECT = ROWINTERVAL
             MANDATORY = TRUE
            OBJECT = STARTROW
                   MANDATORY = TRUE
            END_OBJECT = STARTROW
                OBJECT = STOPROW
                   MANDATORY = TRUE
                    END_OBJECT = STOPROW
        END_OBJECT = ROWINTERVAL
        END_OBJECT = ROWINTERVALGROUP

    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTMULTIWRS

/*The service for extracting information by multiple means, area by*/
/*Bounding Box*/
    OBJECT = EXTRACTMULTIBB
        ADVERTISED = TRUE
        OBJECT = BOUNDINGBOXGROUP
            MANDATORY = FALSE
        OBJECT = BOUNDINGBOX
            Mandatory = TRUE
        OBJECT = UPPERLEFTLAT
```

```
            MANDATORY = TRUE
        END_OBJECT = UPPERLEFTLAT
        OBJECT = UPPERLEFTLONG
            MANDATORY = TRUE
        END_OBJECT = UPPERLEFTLONG
        OBJECT = LOWERRIGHTLAT
             MANDATORY = TRUE
          END_OBJECT = LOWERRIGHTLAT
        OBJECT = LOWERRIGHTLONG
           MANDATORY = TRUE
        END_OBJECT = LOWERRIGHTLONG
        END_OBJECT = BOUNDINGBOX
    END_OBJECT = BOUNDINGBOXGROUP

    OBJECT = TIMEINTERVALGROUP
        MANDATORY = FALSE
        OBJECT = RANGEBEGINNINGTIME
           MANDATORY = TRUE
        END_OBJECT = RANGEBEGINNINGTIME

        OBJECT = RANGEENDINGTIME
           MANDATORY = TRUE
        END_OBJECT = RANGEENDINGTIME

        OBJECT = RANGEBEGINNINGDATE
           MANDATORY = TRUE
        END_OBJECT = RANGEBEGINNINGDATE

        OBJECT = RANGEENDINGDATE
           MANDATORY = TRUE
        END_OBJECT = RANGEENDINGDATE
    END_OBJECT = TIMEINTERVALGROUP

        OBJECT = ALTINTERVALGROUP
            MANDATORY = FALSE
        OBJECT = ALTINTERVAL
             MANDATORY = TRUE
             OBJECT = ALTSTART
                    MANDATORY = TRUE
                  END_OBJECT = ALTSTART
         OBJECT = ALTSTOP
                MANDATORY = TRUE
```

```
                END_OBJECT = ALTSTOP
        END_OBJECT = ALTINTERVAL
        END_OBJECT = ALTINTERVALGROUP

        OBJECT = ALTLEVELNAMEGROUP
            MANDATORY = FALSE
        OBJECT = LEVEL
             MANDATORY = TRUE
        END_OBJECT = LEVEL
        END_OBJECT = ALTLEVELNAMEGROUP
        OBJECT = SUBSETPARAMETERGROUP
            MANDATORY = FALSE
        OBJECT = SUBSETPARAMETER
                MANDATORY = TRUE
        END_OBJECT = SUBSETPARAMETER
    END_OBJECT = SUBSETPARAMETERGROUP
        OBJECT = ROWINTERVALGROUP
            MANDATORY = FALSE
        OBJECT = ROWINTERVAL
             MANDATORY = TRUE
            OBJECT = STARTROW
                   MANDATORY = TRUE
            END_OBJECT = STARTROW
                OBJECT = STOPROW
                   MANDATORY = TRUE
                    END_OBJECT = STOPROW
        END_OBJECT = ROWINTERVAL
        END_OBJECT = ROWINTERVALGROUP

    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTMULTIBB

/*The service for applying a mask (selected products only)*/
    OBJECT = APPLYMASK
        ADVERTISED = TRUE
        OBJECT = MASK
            MANDATORY = TRUE
        END_OBJECT = MASK
    OBJECT = FILENAME
            MANDATORY = FALSE
```

```
    END_OBJECT = FILENAME
    END_OBJECT = APPLYMASK

/*The service for swath width reduction (selected products only)*/
    OBJECT = EXTRACTNARROW
        ADVERTISED = TRUE
        OBJECT = PIXELINTERVAL
            MANDATORY = TRUE
        OBJECT = STARTPIXEL
               MANDATORY = TRUE
        END_OBJECT = STARTPIXEL
        OBJECT = STOPIXEL
               MANDATORY = TRUE
        END_OBJECT = STOPIXEL
        END_OBJECT = PIXELINTERVAL
    OBJECT = FILENAME
        MANDATORY = FALSE
    END_OBJECT = FILENAME
    END_OBJECT = EXTRACTNARROW
END_GROUP = SERVICE

/* ESDT Data Type Structure */
GROUP = STRUCTURE
   OBJECT = STRUCTURE
       CSDTType = "Projected Grid"
       /*CSDTType must equal one of the valids for attribute PrimaryCSDT*/
       CSDTInterfaceType = Conformant
       /*CSDTInterfaceType equals one {Conformant, NonConformant, ConformantWSwath, NonConformantWSwath}*/
       CSDTImplementation = EOSHDF
       /*{Other CSDTImplementation valids TBD, but will include IMAGE and RAW}*/
   END_OBJECT = STRUCTURE
END_GROUP = STRUCTURE

GROUP = EVENT

    /* Delete Event */

    OBJECT = DELETE
        DESCRIPTION = "A granule of ESDTemplateName type was deleted from the DataServer's holdings"
        CATEGORY = ESDT
        OBJECT = EVENTPARMS
            ARGUMENTS = UR
```

```
        TYPE = STRING

        /*****************************************/
        /*  The "Qualified Events" are listed as */
        /*  a series of OBJECT, END_OBJECT pairs */
        /*  for each granule-level attribute     */
        /*  which may be used to establish       */
        /*  qualifiers for a subscription.       */
        /*                                       */
        /*  Qualified Events for DELETE go here, */
        /*  e.g.                                 */
        /*                                       */
        /*  OBJECT = TimeofDay                   */
        /*  END_OBJECT = TimeofDay               */
        /*                                       */
        /*  OBJECT = CalendarDate                */
        /*  END_OBJECT = CalendarDate            */
        /*                                       */
        /*****************************************/

    END_OBJECT = EVENTPARMS
END_OBJECT = DELETE

/* Insert Event */
/*  With a few exceptions, most all of the attributes defined as OBJECTS in the   */
/*  INVENTORYMETADATA section of the  Descriptor file are listed, including those */
/*  in the ProductSpecificMetadata group.                                         */
/*                                                                                */
/*  The exceptions are:                                                           */
/*                                                                                */
/*  Container Objects (although the objects defined within the container are      */
/*                          to be included in the list of qualified events)       */
/*  ShortName                                                                     */
/*  VersionID                                                                     */
/*  InputPointer                                                                  */
/*  AncillaryInputType                                                            */
/*  AncillaryInputPointer                                                         */
/*  OrbitalParametersPointer                                                      */
/*                                                                                */
/**********************************************************************************/
OBJECT = INSERT
    DESCRIPTION = "A granule of ESDTemplateName type was added to the DataServer's holdings"
```

```
        CATEGORY = ESDT
        OBJECT = EVENTPARMS
            ARGUMENTS = UR
            TYPE = STRING

            /****************************************/
            /*  The "Qualified Events" are listed as */
            /*  a series of OBJECT, END_OBJECT pairs */
            /*  for each granule-level attribute     */
            /*  which may be used to establish       */
            /*  qualifiers for a subscription.       */
            /*                                       */
            /*  Qualified Events for INSERT go here, */
            /*  e.g.                                 */
            /*                                       */
            /*  OBJECT = TimeofDay                   */
            /*  END_OBJECT = TimeofDay               */
            /*                                       */
            /*  OBJECT = CalendarDate                */
            /*  END_OBJECT = CalendarDate            */
            /*                                       */
            /****************************************/

        END_OBJECT = EVENTPARMS
    END_OBJECT = INSERT

    /* Update Metadata Event */
    /*  With a few exceptions, most all of the attributes defined as OBJECTS in the   */
    /*  INVENTORYMETADATA section of the  Descriptor file are listed, including those */
    /*  in the ProductSpecificMetadata group.                                         */
    /*                                                                                */
    /*  The exceptions are:                                                           */
    /*                                                                                */
    /*  Container Objects (although the objects defined within the container are      */
    /*                          to be included in the list of qualified events)       */
    /*  ShortName                                                                     */
    /*  VersionID                                                                     */
    /*  InputPointer                                                                  */
    /*  AncillaryInputType                                                            */
    /*  AncillaryInputPointer                                                         */
    /*  OrbitalParametersPointer                                                      */
    /*                                                                                */
```

```
    /*****************************************************************************/
    OBJECT = UPDATEMETADATA
        DESCRIPTION = "The metadata for this granule (of type ESDTemplateName) has been modified"
        CATEGORY = ESDT
        OBJECT = EVENTPARMS
            ARGUMENTS = UR
            TYPE = STRING

            /*************************************/
            /*  Qualified Events for UPDATEMETADATA  */
            /*  go here, e.g.                    */
            /*                                   */
            /*  OBJECT = TimeofDay               */
            /*  END_OBJECT = TimeofDay           */
            /*                                   */
            /*  OBJECT = CalendarDate            */
            /*  END_OBJECT = CalendarDate        */
            /*                                   */
            /*************************************/


        END_OBJECT = EVENTPARMS
   END_OBJECT = UPDATEMETADATA
END_GROUP = EVENT

/* End Descriptor File marker */
END
```