COMMON DATABASE

SPECIFICATION

Release Notes

Version 3.2

Update 1

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Common Database (CDB)

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1 CDB Specification Version 3.2 Update 1

This update to the Specification provides corrections and clarifications to the documents and to the accompanying files forming the CDB Specification package. Here is a summary of the changes:

1. Added Section 5.8.1.1 to define a limit on the size of GSModel archives
2. Dataset 309 – GSModelCMT
    - Was restricted to one file per geocell
    - Restriction removed
    - It is now possible to have one file per tile
    - May look like a change but this is in fact a correction that was discovered during actual implementation
3. Dataset 311 – GSModelInteriorCMT
    - Dataset 308, GSModelInteriorMaterial, needs its own CMT; it cannot share the one of dataset 304, GSModelMaterial
4. Dataset 312 – T2DModelCMT
    - Dataset 310, T2DModelGeometry, needs a CMT
    - Its omission has been noted by developers during actual implementation
5. Correction to the Feature Data Dictionary
    - The name of FACC code UF002-000 exceeded 32 characters.
    - Building_Component_Entrance_Or_Exit has been changed to Building_Component_Entrance_Exit
6. Section 6.8 – Model Levels-of-Detail
    - The concept of Significant Size has been simplified and better described.
7. Handling of Topological Networks
    - Addition of Section 5.7.1.6.4, Network Vector Priority
    - Addition of Section 5.7.1.9, Vector Significant Size and Spatial Significance Criteria
    - Addition of Appendix A.21, Vector Priority Tile-LOD Generation
8. Addition of a Priority field to the Feature Data Dictionary.
    - The FDD is stored in Feature_Data_Dictionary.xml
    - Added to FACC codes recommended for Lineal Vector Datasets

- Referred to in Appendix A.21

9. Need for additional Base Materials for use with building interiors
    - BM_AIR
    - BM_FOAMBOARD
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10. Countries added to Appendix I
    - 337 – Serbia
    - 338 – Montenegro
    - 339 – South Sudan
11. Changes to CDB Attributes
    - WGP – Description adjusted to cover the case of Powerlines
    - NVT – Restored (was Deprecated in 3.2)
    - CDB_Attributes.xml – Modified to reflect Table 5-27
12. Changes to Section 6.2.2.1
    - Restriction 3 has been modified
13. Addition of new Airliners to Appendix O
    - Code 287 to 297
14. Added an optional XML attribute to Version.xml described in section 5.1.6 to store the update number of this version of the Specification.

2 CDB Specification Version 3.2

Version 3.2 of the CDB Specification is compatible with version 3.0. Applications that are developed to comply with version 3.2 of the Specification will be able to read and write CDB 3.0 databases because version 3.2 is *backward* compatible with version 3.0 of the Specification. Similarly, applications that have been developed to comply with version 3.0 of the Specification will be able to read (but not write) CDB 3.2 databases; provided they correctly ignore data that is new with version 3.2. This is called *forward* compatibility.

The following sections list all changes and additions to version 3.0 of the Specification.

2.1 Packaging

The CDB Specification is now distributed as an archive whose name is:

```
CDB Specification – Version x.y[.z].zip
```

The archive contains two root folders:

`/Documents/`
: contains the PDF documents making up the Specification

`/CDB/`
: illustrates the directory structure and file naming conventions of a CDB; it also contains the `Metadata` folder where developers will find important XML files

The important files of the distribution package are the followings:

```
/Documents/CDB Specification - Volume 1.pdf
/Documents/CDB Specification - Volume 2.pdf
/CDB/Metadata/*.xml
```

2.2 Additions to Version 3.0 of the Specification

Additions are in the form of new datasets, new feature or model attributes, and new enumerations. They are listed below.

2.2.1 New Datasets

2.2.1.1 Metadata

Version 3.0 did not assign dataset codes to its Metadata files. In version 3.2, dataset codes 700 and 701 have been assigned to these files, even though their names have not changed to preserve compatibility. In addition, new metadata files are provided by version 3.2; they are:

1. Configuration.xml

2. CDB_Attributes.xml
3. Geomatics_Attributes.xml
4. Vendor_Attributes.xml

For more details, refer to section 5.1 of the Specification.

2.2.1.2 GTModel Library

The GTModel library of CDB 3.0 had four (4) datasets. Version 3.2 adds the following ten (10) datasets:

Dataset Code	Dataset Name
504	GTModelMaterial
505	GTModelCMT
506	GTModelInteriorGeometry
507	GTModelInteriorTexture
508	GTModelInteriorDescriptor
509	GTModelInteriorMaterial
510	GTModelGeometry
511	GTModelTexture
512	GTModelSignature
513	GTModelInteriorCMT

With these additions, version 3.2 now offers a total of 14 datasets to represent geo-typical models. Complete details are found in sections 3.4 and 5.4 of the Specification.

2.2.1.2.1 Compatibility Issues

Datasets 500 (from version 3.0) and 510 (introduced in version 3.2) are both named GTModelGeometry because they both contain the geometry of a model. In version 3.2, dataset 500 contains external references to dataset 510. Details are found in section 6.2.4 of the Specification.

Dataset 501 (from version 3.0) has been deprecated and replaced with dataset 511 (introduced in version 3.2) which has retained the name GTModelTexture.

Dataset 502 (from version 3.0) has been deprecated and replaced with dataset 512 (introduced in version 3.2) which has retained the name GTModelSignature.

2.2.1.3 MModel Library

The MModel library of CDB 3.0 had 4 datasets. Version 3.2 adds the following three (3) datasets:

Dataset Code	Dataset Name
604	MModelMaterial
605	MModelCMT

Dataset Code	Dataset Name
606	MModelSignature

With these additions, version 3.2 now offers a total of seven (7) datasets to represent moving models. Complete details are found in sections 3.5 and 5.5 of the Specification.

2.2.1.3.1 Compatibility Issues

Dataset 602 (from version 3.0) has been deprecated and replaced with dataset 606 (introduced in version 3.2) which has retained the name MModelSignature.

2.2.1.4 Primary Alternate Terrain Elevation

A new component has been added to the terrain elevation dataset and provides more precise terrain elevation values at latitude and longitude positions that are specified in the form of offsets relative to the Primary Elevation Grid. Details are found in Section 5.6.1.4, Primary Alternate Terrain Elevation Component.

2.2.1.5 Imagery

A new component has been added to the imagery dataset to store quarterly VSTI representations; this new dataset replaces the seasonal VSTI representations that are now deprecated. Details are found in Section 5.6.2, Tiled Imagery Dataset.

2.2.1.6 Tiled 2D Models

Version 3.2 adds dataset 310, Tiled 2D Model, to complement the terrain elevation (001), imagery (004), and material (005) datasets. This new dataset represents a better mean of representing Airport Lineal and Areal features than the mechanism provided in version 3.0 through the use of the APFN attribute. For this reason, Section 5.3.1.9.1, Airport Lineal Features Components, and Section 5.3.1.9.2, Airport Areal Features Components, of the first volume of CDB 3.0 have been deprecated.

Details about T2DModel can be found in these sections:

- Section 3.3.3, T2DModel (Tiled 2D Model)
- Section 5.8.2, Tiled T2DModel Datasets
- Section 6.2.2, T2DModel Tree Structure

2.2.1.7 Tiled GTFeature Dataset

Version 3.0 provided only point features; version 3.2 adds lineal and areal features for man-made objects and trees. Details are found in Section 5.7.4, Tiled GTFeature Dataset.

2.2.1.8 Tiled GeoPolitical Dataset

Version 3.0 provided two geopolitical feature components, boundaries and locations. Version 3.2 adds a third component to specify elevation constraints. Details are found in Section 5.7.5.2, Elevation Constraint Features.

2.2.2 New Feature Attributes

Version 3.0 provides 61 feature attributes. Version 3.2 adds the following six (6) attributes:

1. CEAI – CDB Extended Attribute Index
2. DAMA – Damage Level
3. GAID – Gate ID
4. GEAI – Geomatics Extended Attribute Index
5. TXID – Taxiway ID
6. VEAI – Vendor Extended Attribute Index

For more details, refer to Section 5.7.1.3, CDB Attributes.

2.2.3 Addition of a CDB Attribute Extension Mechanism

CDB Attributes are used along Vector Datasets. Some of these attributes act as class attributes and others as instance attributes. In version 3.2, it is now possible to extend the set of attributes of a dataset by using the Extended Attribute Schema presented in 5.7.1.2.7.3, Extended-level Schema.

Note that version 3.0 had its own attribute extension mechanism described in section 5.3.1.3 of its first volume. This mechanism is now obsolete and has been deprecated.

2.2.4 New Model Textures

Several kinds of textures have been added to the list of RBG textures available to OpenFlight models. The complete list can be found in Section 5.3, CDB Model Textures. The new texture kinds are listed here:

Kind	Name
006	Airline Paint Scheme
007	Shadow Map
008	Motion Blur
009	Quarterly Texture
051	Night Map
052	Tangent-Space Normal Map
053	Light Map
054	Contaminant
055	Skid Mark
056	Detail Texture
057	Cubic Reflection map
058	Gloss Map

Note that texture kind 099 from version 3.0 is now obsolete and has been deprecated.

2.2.5 New CDB Lights

The followings are new CDB lights:

Code	Type
489	\Light\Cultural\Airport Lighting\Taxiway\Lead-on\Green Light
490	\Light\Cultural\Airport Lighting\Taxiway\Lead-on\Yellow Light
491	\Light\Cultural\Airport Lighting\Taxiway\Lead-off
492	\Light\Cultural\Airport Lighting\Taxiway\Lead-off\Green Light
493	\Light\Cultural\Airport Lighting\Taxiway\Lead-off\Yellow Light
494	\Light\Platform\Air\Aircraft_Helos\Military\Unmanned\Navigation
495	\Light\Platform\Air\Aircraft_Helos\Military\Unmanned\Navigation\Red Light
496	\Light\Platform\Air\Aircraft_Helos\Military\Unmanned\Navigation\Green_Light
497	\Light\Platform\Air\Aircraft_Helos\Military\Unmanned\Navigation\White Light
498	\Light\Platform\Air\Aircraft_Helos\Military\Unmanned\Position
499	\Light\Platform\Air\Aircraft_Helos\Military\Unmanned\Position\Orange Light
500	\Light\Platform\Air\Aircraft_Helos\Military\Unmanned\Position\White_Light
501	\Light\Platform\Air\Aircraft_Helos\Anti-collision\High Intensity
502	\Light\Platform\Air\Aircraft_Helos\Navigation\Red_Light\Flashing_Red_Light
503	\Light\Platform\Air\Aircraft_Helos\Navigation\Red_Light\Flashing_Green_Light
504	\Light\Platform\Air\Aircraft_Helos\Navigation\Red_Light\Flashing_White_Light

These additions are part of `/CDB/Metadata/Lights.xml`

2.2.6 New FDD Entries

Several additions were made to the CDB Feature Data Dictionary which lists all supported FACC codes. These additions are summarized below. Cells that are blue-shaded represent a range of consecutive codes or a complete set of codes.

FACC	FACC	FACC	FACC	FACC	FACC	FACC
AB015-000	AB040-000	AB507-000	AC060-000	AC070-000	AC507-000	AC507-000
AD025-000	AD041-000	AD055-000	AD060-000	AG030-000	AG040-000	AG050-000
AH030-000	AJ055-000	AJ060-000	AJ070-000	AJ080-000	AJ085-000	AJ090-000
AJ100-000	AJ110-000	AJ501-000	AJ525-000	AK015-000	AK051-000	AK123-000
AK124-000	AK140-000	AK141-000	AK161-000	AK164-000	AK165-000	AK166-000
AK200-000	AK539-000	AL010-000	AL011-000	AL013-000	AL014-000	AL015-138
AL017-000	AL022-000	AL035-000	AL036-000	AL065-000	AL095-000	AL099-000
AL121-000	AL142-000	AL165-000	AL175-000	AL180-000	AL208-000	AL209-000
AL211-000	AL270-000	AL330-000	AL351-000	AL370-000	AL375-000	AL510-000
AM042-000	AM065-000	AM071-000	AM075-000	AM091-000	AM510-000	AN015-000
AN076-000	AN085-000	AP030-005 to AP030-018	AP032-000	AQ035-000	AQ036-000	AQ063-000
AQ075-000	AQ095-000	AQ105-000	AQ114-000	AQ115-000	AQ141-000	AQ152-000
AQ160-000	AQ161-000	AQ162-000	AQ170-000	AQ180-000	AQ200-000	AT011-000
AT012-000	AT042-000	BA005-000	BA025-000	BA052-000	BA070-000	BB008-000
BB009-000	BB015-000	BB082-000	BB091-000	BB092-000	BB095-000	BB112-000
BB149-000	BB175-000	BB241-000	BB270-000	BC021-000	BC034-000	BC103-000
BD002-000	BD003-000	BD061-000	BD075-000	BD076-000	BD115-000	BD125-000
BD190-000	BF020-000	BG013-000	BH012-000	BH049-000	BH051-000	BH065-000
BH081-000	BH082-000	BH171-000	BH172-000	BH173-000	BH192-000	BH220-000
BH230-000	BH240-000	BH250-000	BI006-000	BI032-000	BI033-000	BI044-000
BI045-000	BJ031-000	BJ099-000	BJ105-000	CA050-000	CA099-xxx	DB000-000
DB001-000	DB061-000	DB071-000	DB072-000	DB181-000	DB185-000	DB534-000

FACC	FACC	FACC	FACC	FACC	FACC	FACC
DB561-000	EA537-000	EB040-000	EB050-000	EB060-000	EB070-000	EB080-000
EC005-xxx	EC007-000	EC030-900 to EC030-904	EC050-000	EC060-000	EC070-000	ED030-000
ED040-000	EE030-000	EE050-000	EE060-000	EE100-000	FA002-000	FA003-000
FA006-000	FA007-000	FA012-000	FA045-000	FA091-000	FA120-000	FA210-000
FA517-000	FA574-000	FC033-000	FC034-000	FC037-000	FC038-000	FC042-000
FC045-000	FC046-000	FC047-000	FC050-000	FC055-000	FC179-000	FC200-000
GB222-000	GB230-000	GB250-000	GB900-xxx	GB901-xxx	GB902-xxx	GB903-xxx
GB904-xxx	GB905-xxx	GB906-000	GB907-000	GB908-000	GB909-000	GCxxx-xxx
IA041-000	Kxxxx-xxx	Mxxxx-xxx	Nxxxx-xxx	Uxxxx-xxx	Vxxxx-xxx	Wxxxx-xxx
ZB032-000	ZC500-000	ZD019-000	ZD030-000	ZIxxx-xxx	ZVxxx-xxx	

The complete list of FACC codes is provided in this file:

```
/CDB/Metadata/Feature_Data_Dictionary.xml
```

2.2.7 Additions to Chapter 6, CDB OpenFlight Models

Chapter 6 now describes 2D and 3D models. The whole chapter has been rearranged. In version 3.0, the chapter applied to GSModel, GTModel, and MModel. In version 3.2, the description of T2DModel has been added.

In particular, note the addition of the interior of 3D models to address the need to enter and search building interiors. Details are found in Section 6.5.6.4, Model Interior Zones.

A list of important additions follows, each with a reference to the associated section number.

- Section 6.3.4, Relative Priority
  - To implement layering or coplanar geometry
- Section 6.12, Model Attributes
  - A general mechanism to add CDB and Vendor attributes to any OpenFlight node
- Section 6.7, Model Conforming
  - To integrate a model into and onto the terrain using different methods
- Section 6.8.3, Significant Size
  - A method to compute the Significant Size of a LOD
- Section 6.9, Model Switch Nodes
  - A revised description of the concept of a switch to control the state of a component of the model.
- Section 6.10, Model Articulations
  - New attributes to specify the rates of change of each DOF.
- Section 6.13.5.5, Model Tangent-Space Normal Maps
  - Replaces Bump Maps described in Section 6.13.8 of version 3.0
- Section 6.13.5.6, Model Detail Texture Maps
  - In particular, to add a micro-texture to surfaces
- Section 6.13.5.7, Model Contaminant and Skid Mark Textures
  - Especially useful to add marks on runways of T2DModels

- Section 6.13.5.8, Model Cubic Reflection Maps
  - To add the reflection of the surrounding objects of shiny surfaces
- Section 6.13.5.9, Model Gloss Maps
  - To control the shininess of a surface on a per-pixel basis
- Section 6.13.5.10, Model Material Textures
  - To specify the composite material of a surface on a per-pixel basis

New predefined CDB Points and CDB Zones have been added; they are:

- Section 6.6.2.4, Model Anchor Point
- Section 6.6.2.5, Model Center of Mass
- Section 6.5.6.2, Model Footprint Zone
- Section 6.5.6.3, Model Cutout Zone

New XML elements and XML attributes have been added to the Model Metadata, now called Model Descriptor; they are:

- Section 6.14.5.1, Texture Metadata
  - Texture Number Attribute
  - Texture Dataset Number
- Section 6.14.5.2, Texture Switch

2.2.8 Addition of Gamma Controls

Version 3.2 provides control over the gamma correction value associated with various images and textures of the CDB. This control is provided through the addition of the following default values:

- Default_Imagery_Gamma
- Default_GSModelTexture_Gamma
- Default_GSModelInteriorTexture_Gamma
- Default_GTModelTexture_Gamma
- Default_GTModelInteriorTexture_Gamma
- Default_MModelTexture_Gamma

These default values are found in this file:

```
/CDB/Metadata/Defaults.xml
```

2.3 Modifications to Version 3.0 of the Specification

This section of the Release Notes addresses the need to clarify, improve, and correct version 3.0. They consist in changes that could affect compatibility if not handled properly. When this is the case, guidelines are provided to avoid a compatibility break between 3.0 and 3.2.

2.3.1 Changes in the Organization of the Volumes

2.3.1.1 The Role of Chapter 2

The role and title of Chapter 2 has changed from "CDB Naming Conventions" to "CDB Concepts". The introduction found in Section 2.1 has been replaced with the presentation of the CDB tiling scheme in "Partitioning the Earth into Tiles".

2.3.1.2 Appendix E

The CDB Lights can now be found in this file:

```
/CDB/Metadata/Lights.xml
```

The content of Appendix E is still there because the XML file does not yet contain the data from all columns of the table. In a future version of the Specification, the table of CDB Lights presented in the appendix will be moved to the XML files, and the table will then be removed.

2.3.1.3 Appendix F

The content of Appendix F has been moved to this file:

```
/CDB/Metadata/Model_Components.xml
```

2.3.1.4 Appendix J

All XML schema files that were presented in Appendix J have been moved to this folder:

```
/CDB/Metadata/Schema
```

2.3.1.5 Appendix L

The content of Appendix L has been moved to this file:

```
/CDB/Metadata/Materials.xml
```

2.3.1.6 Appendix M

The content of Appendix M has been moved into three (3) files; they are:

```
/CDB/Metadata/Feature_Data_Dictionary.xml
/CDB/Metadata/Moving_Model_Codes.xml
/CDB/Metadata/DIS_Country_Codes.xml
```

2.3.1.7 Appendix N

Appendix N has been renamed from "Mapping of FACC to CDB Datasets" to "CDB Feature Data Dictionary" and its content has been moved to this file:

```
/CDB/Metadata/Feature_Data_Dictionary.xml
```

2.3.1.8 Appendix O

Appendix O has been renamed from "Model Skin Names" to "List of Texture Component Selectors". The list now contains enumeration of base textures (formerly skins) as well as subordinates texture components for contaminants and skid marks. It is expected that the list will be transferred to an XML file in a future version of the Specification.

2.3.1.9 Appendix U

Section 4.1, CDB Compliant Zip Reader, found in volume 1 of version 3.0 has been moved to Appendix U, ZIP File Format Specification, in volume 2 of version 3.2.

2.3.2 Changes in the Designation of Types of Datasets

The expression "2D Matrix-Organized Tiled Dataset" has been replaced with "Tiled Raster Dataset". Similarly, the expression "List-Organized Tiled Dataset" has been replaced with "Tiled Vector Dataset".

2.3.3 Modifications to CDB Lights

Besides the addition of new CDB lights listed in paragraph 2.2.5 above, the following and existing CDB lights have been modified because their light codes were duplicated with other CDB lights. The table lists the light code from version 3.0 and the new code in version 3.2.

Code		Name
3.0	3.2	
425	466	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light
426	467	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Starboard
427	468	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Starboard\Green_Light
428	469	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Starboard\Red_Light
429	470	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Starboard\Yellow_Light
430	471	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Port
431	472	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Port\Green_Light
432	473	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Port\Red_Light
433	474	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Pod_Light\Port\Yellow_Light
434	475	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light
435	476	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Starboard
436	477	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Starboard\Amber_Light
437	478	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Starboard\Green_Light
438	479	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Starboard\Red_Light
439	480	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Starboard\Yellow_Light
440	481	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Port
441	482	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Port\Amber_Light
442	483	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Port\Green_Light
443	484	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Port\Red_Light
444	485	\Light\Platform\Air\Aircraft_Helos\Military\Cargo_Tanker\Aldus_Light\Port\Yellow_Light
445	486	\Light\Platform\Air\Aircraft_Helos\Military\Helicopter\Special_Ops\MH-47E
446	487	\Light\Platform\Air\Aircraft_Helos\Military\Helicopter\Special_Ops\MH-47E\Porch_Light

The following CDB lights are now obsolete and have been deprecated in 3.2.

Code	Name
297	\Light\Cultural\Airport_Lighting\Obstruction\Flashing_Light
298	\Light\Cultural\Airport_Lighting\Obstruction\Hi_Intensity_Light
419	\Light\Cultural\Airport_Lighting\Taxiway\Guard\Type1_Light

Code	Name
420	\Light\Cultural\Airport_Lighting\Taxiway\Guard\Type2_Light
421	\Light\Cultural\Airport_Lighting\Taxiway\Guard\Type3_Light
422	\Light\Cultural\Airport_Lighting\Taxiway\Guard\Type4_Light

The above modifications can be found in this file:

```
/CDB/Metadata/Lights.xml
```

2.3.4 Modifications to CDB Attributes

In version 3.0, CDB Attributes were listed and described in Section 5.3.1.2, Instance and Class Attribution, and their use was specified in subsequent sections, from 5.3.1.3 to 5.3.1.16.

In version 3.2, the following changes were made:

- Instead of separating the attributes in two lists, class and instance, a single and consolidated list is provided in Section 5.7.1.3, CDB Attributes.
- Instead of presenting two tables of (class and instance) attributes for each vector dataset, the allocation of attributes to each vector dataset is now presented in a single and global table, Table 5-27: Allocation of CDB Attributes to Datasets.
- A correction has been made regarding the DIR attribute. The description of the attribute was missing from 3.0 although it was mentioned several times in various tables of chapter 5. The reader will now find the description of this attribute in Section 5.7.1.3.18, Directivity (DIR).
- The following CDB Attributes are obsolete as of version 3.2 and have been deprecated.
  - AEAC
  - APFN
  - CEAC
  - DEAC
  - LMIX
  - NIS
  - NIX
  - NNL
  - NTC
  - NTX
  - NVT

2.3.5 Modifications to the Elevation Dataset

The following changes have an impact on the Elevation dataset (001):

- The concept of tunnels has been removed and replaced with 3D models having Cutout zones.
- A component has been added to specify the elevation offset as mentioned in paragraph 2.2.1.4 above.

- It has been clarified that the correct file extension of TIFF files is `.tif`, in lowercase.
- The elevation can now be specified using integral types as supported by the TIFF format. Details are found in Section 5.6.1.3.1, Data Type. Note that the use of integral types improves storage and compression efficiencies at the cost of runtime scaling of elevation values.

2.3.6 Modifications to the Imagery Dataset

The following changes have an impact on the Imagery dataset (004):

- The concept of seasons has been replaced with the one of quarters.
  - The name and the number of seasons vary with the location on the Earth.
  - Over time, it has been observed that the implementation and the use of seasonal textures were almost impossible.
  - In contrast, the mapping of months to quarters is fixed and unambiguous.
- The mention of the YUV color space has been removed to concentrate on the RGB color space.
- It has been clarified that the correct file extension of JPEG 2000 image files is `.jp2`, in lowercase.
- The defaulting mechanism between monthly, quarterly and year-round textures has been revised and simplified; the result is presented in Section 5.6.2.3.2, Default Read Value.

2.3.7 Modifications to the Raster Material Dataset

The following changes have an impact on the Raster Material dataset (005):

- It has been clarified that the correct file extension of TIFF files is `.tif`, in lowercase.
- The material mixture can now be specified using integral types as supported by the TIFF format. Details are found in Section 5.6.3.3.1, Data Type. Note that the use of integral types improves storage and compression efficiencies at the cost of runtime scaling of mixture values.

2.4 Deprecated Datasets

The following datasets are now obsolete and, as such, are marked deprecated.

- Elevation (Dataset 001)
  - Primary Terrain Elevation Control (CS1 = 001, CS2 = 002)
  - Subordinate Terrain Elevation (CS1 = 002..099, CS2 = 001)
  - Subordinate Terrain Elevation Control (CS1 = 002..099, CS2 = 002)
- Imagery (Dataset 004)
  - Alternate Seasonal VSTI Representations (CS1 = 002)

- Extension (Datasets 1xx and 2xx)
  - ATARS Extended Attribute (CS2 = 012)
  - DIGEST Extended Attribute (CS2 = 013)
  - CDB Extended Attribute (CS2 = 014)

3 CDB Specification Version 3.1

During the preparation of version 3.2 of the Specification, the CDB Board realized that some portions of the CDB data model as implemented in version 3.1 were no longer compatible with that of version 3.0. This situation made it particularly difficult to combine portions of CDB databases built from different versions of the Specification. While the CDB Board members believe it is possible to develop an application that caters to both versions 3.1 and 3.0 of the data models, there are nonetheless cases where such application may be too complex to develop or not feasible in a real-time implementation.

Version 3.2 of the CDB Specification restores a maximum of compatibility with the earlier version 3.0. All functionalities and features introduced by version 3.1 have been preserved in version 3.2; however, their implementation was reviewed to take into account all aspects of backward and forward compatibility between versions 3.0 and 3.2. As a result, tools and applications developed for version 3.2 of the Specification will be able to easily process CDB 3.0 databases. In addition, applications developed for version 3.0 of the Specification will be easier to update to version 3.2.

Presagis does not intend in supporting version 3.1 of the Specification in its integrated suite of modeling and simulation tools.

That being said, the CDB Board recommends that CDB developers and users, wishing to migrate their CDB 3.0 applications, target version 3.2 over 3.1 because of the reduced efforts in preserving their CDB 3.0 assets.

4 CDB Specification Version 3.0

CDB 3.0 is the first publicly available version of the Specification. It has been released in September of 2008.