

What's new in Carmenta Engine 4.7

C++ API

With Carmenta Engine version 4.7, a new C++ API is introduced. It is intended to be used instead of the COM interface, where COM is not available, or where a leaner interface is wanted, without all the COM overhead.

The call overhead with this new API are generally half that of the COM API, and a ¼ that of the .Net API. Decreasing the overhead can make a big difference for the overall performance in applications that are moving or accessing a large amount of objects in a short period of time.

Easier to deploy Carmenta Engine applications

Apart from being the most efficient API, the new C++ API also has one other great advantage. Since it is independent of COM and does not use the Windows Registry, administrator rights are not needed to deploy applications.

As a consequence, you do not need installation programs, neither for deploying your own application nor for the Carmenta Engine Runtime. Putting you application executable with its dependent resources in a simple zip-file or mapping to a network folder may be enough. All the end-user has to do is to click the exe-file and run.

This method is often referred to as xcopy installation and is especially useful when distributing applications for a mass market, or when deploying applications on systems with restrained access rights.

Version aware map configuration

SpaceLab, the visual map configuration tool, now has functionality to help map developers make and manage map configurations that should be compatible with older versions of Carmenta Engine. The new functionality, which is enabled in the options dialog, will clearly mark all incompatible objects, properties or property values in a map configuration with warning flags.

This is useful when creating a configuration that should run on an older version of Carmenta Engine. Note, however, that it is still important to test the final result using the actual versions of Carmenta Engine that the configuration targets.

Automatic detection of coordinate reference systems in geodata files

In previous versions of Carmenta Engine, only a few of the data readers could automatically use the reference system information in the geodata files. Instead, most data formats required that the reference system was predefined or defined by the application in advance, and usually set on the dataset in map configuration.

From now on, reference system information is automatically read and set up for formats such as GeoTIFF, ESRI Shape, MapInfo Tab and about 30 others. This will save a great deal of time when developing functionality that adds new data layers to applications at runtime or when making map configurations.

Improved map projection formulas

The areas of high accuracy have been much extended for TransverseMercator and PolarStereographic. For the general Stereographic we have added a new International variant, since this variant is widely used and differs significantly from the U.S. variant.

Coordinate Reference Systems FAQ

The Coordinate Reference Systems FAQ is a new document in the Carmenta Engine documentation and is a list of questions and answers about coordinate reference systems.

New predefined reference system

- WGS84mercator1SP_web is a predefined reference system that implements Web Mercator, which has become popular for web mapping.
- WGS84mercator1SP_ellipsoid is another new predefined reference system, this implements EPSG:3395, which is more traditional and recommended by EPSG.

Support for OGC Web Coverage Service (WCS)

With the new WCS support it is possible to have a layer that gets raster data over the web from an OGC WCS compliant web service.

Support for Google Earth / Keyhole Markup Language (KML)

It is now possible to read Google Earth / Keyhole Markup Language (KML) KML files.

Other improvements

- The property RefSystem.datumShiftAlgorithm has been deprecated and will be ignored. Together with a new and more accurate semantics for datum transformations, this means that it is easier to define RefSystems and GeodeticDatums.
- RasterCacheQuery has been extended with a new set of properties for querying for a raster with a specific or relative cell width and height.

Minor improvements and bug fixes

- New alternative in ProjectionFormulaType: #sphereEquatorialRadius. This makes it easier to construct the new Web Mercator projection.
- The badly abbreviated version of SWEREF99TM, namely SWEREF99, remains, but is now treated as just a synonym for SWEREF99TM. As a consequence, its id has been corrected.
- Corrected a small bug in LengthUnitType unit *inch*.
- Added new linear units to LengthUnitType: *yard* (3 feet), *chain* (66 feet), *link* (0.01 chain), and new angular unit: *gon* (older synonyms are *grad*, *grade*, and *gradian*; 100 gon is 90 degrees).
- The behaviors of Stereographic and TransverseMercator projections have been corrected. They do now use *lengthUnit*.

- The MIF dataset handler has been corrected. When it reads reference system information from file, its interpretation of Mercator is now changed to be WGS84mercator1SP_ellipsoid.

For more information about Carmenta Engine, please visit: www.carmenta.com