EPSG v10 data model changes (2020-10-05): relational tables

For details listed by table, see here. In summary:

a) The epsg_area table is removed and replaced by an epsg_extent table. The first seven fields will be renamed, with some reordering. The area_polygon_file_ref field is removed. Five new fields will be added. For all fields in the area table other than area_polygon_file_ref there is a 1:1 mapping from the area table to a field in the extent table. A new epsg_areapolygon table will be included in the repository but not in the Access database export.

b) In addition to the extent table, seven new tables are added:
   - epsg_conventionalRS
   - epsg_datumEnsemble
   - epsg_datumEnsembleMember
   - epsg_datumRealizationMethod
   - epsg_definingOperation
   - epsg_usage
   - epsg_datumRealizationMethod

epsg_definingOperation is a superset of the 19111:2019 heightTransformation association between vertical CRS and coordinateOperation, generalising it to apply to any single CRS that is defined by a coordinate transformation.

c) In the epsg_coordinatereferencesystem, epsg_datum and epsg_coordinateoperation tables, the area_of_use_code and scope fields will be deprecated. They will be changed from mandatory to optional and left unpopulated. These fields will be replaced by the new epsg_usage intersection table.

d) In the epsg_coordinateAxis table, the uom_code field is changed from mandatory to optional.

e) There is a change to one field name in the epsg_coordinateReferenceSystem table.

f) Additional fields are added at the end of the epsg_datum table.

g) There are changes to some field lengths in the following tables:
   - epsg_coordinateAxisName
   - epsg_coordinateSystem
   - epsg_coordinateOperation
   - epsg_coordinateOperationMethod
   - epsg_coordinateOperationParameter
   - epsg_datum
   - epsg_datum
   - epsg_datum
   - epsg_ellipsoid
   - epsg_datum
   - epsg_datum
   - epsg_namingsystem
   - epsg_datum
   - epsg_datum
   - epsg_primeMeridian
   - epsg_datum
   - epsg_unitOfMeasure

h) There are no changes to the structure of the following tables:
   - epsg_alias
   - epsg_change
   - epsg_coordinateOperationParamUsage
   - epsg_coordinateOperationParamValue
   - epsg_coordinateOperationPath
   - epsg_coordinateOperationPath
   - epsg_coordinateOperationPath
   - epsg_coordinateOperationPath

j) For the existing epsg_alias, epsg_coordinateAxis, epsg_deprecation and epsg_supersession tables and the new epsg_usage table, the data population of the code field may change as a result of Dataset releases.

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1 In this document Camel case is used to facilitate reading of table names. In implementation, in the SQL relational tables no upper case characters are used.