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GML application schema for EO products

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The Geography Markup Language is an XML grammar written in XML Schema for the modelling, transport, and storage of geographic information.

From the GML specification, “GML provides a variety of kinds of objects for describing geography including features, coordinate reference systems, geometry, topology, time, units of measure and generalized values. A geographic feature is an abstraction of a real world phenomenon; it is a geographic feature if it is associated with a location relative to the Earth”.

Earth Observation (EO) data product collections are usually structured to contain data items derived from a sensor onboard a satellite or series of sensors. The key characteristics differentiating these products are date of acquisition, location and in some cases, such as the optical imagery, the possible presence of cloud, haze, smokes or other atmospheric or on ground phenomena obscuring the image. These are the key characteristics; there are however other metadata that are required to identify products of interest.

From a user point of view, an EO data product can be naturally described with a spatial extension (e.g. the geographic footprint of a satellite acquisition) and several attributes describing the metadata (e.g. date of acquisition, etc.). Indeed this point of view is consistent with a GML representation of the data.

We described a core interface for EO data product described as a GML version 3.1.1 application schema that can be supported by many data providers (satellite operators, data distributors ...). The metadata described is that which is commonly provided

through catalogue interfaces, it does not necessarily include all of the metadata that is present in the actual EO data product (e.g. calibration coefficients etc.).

This “GML Application Profile for EO products” has been approved by the OGC as a Best Practice specification. It is used as the EO products metadata reference within the Heterogeneous Mission Accessibility (HMA) project.