

A Coordinate Reference System, (CRS), Registry as a Useful Addition to the OASIS Common Alerting Protocol

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As we seek to improve and refine CAP, one significant enhancement from the realm of GIS may be to add a new element (field) to the CAP specification that allows an application to specify a Coordinate Reference System (CRS) other than WGS 84, Latitude/Longitude. This is, at least in part, a response to a US-specific requirement to provide for the use of previously mandated standard, USNG-NAD83.

One possible approach is to follow the OGC and ISO standards as to how to specify a CRS as an XML encoding. Within this context, the OGC Geography Markup Language, an XML encoding for spatial information, can be used. However, in order for an applications using CAP to "understand" a specific CRS codings, access to a CRS registry is required. The OGC and OGC member Galdos have collaborated to standup a prototype CRS registry.

More specifically, in GML a geometric coordinate is interpreted by reference to a CRS definition. For example:

```
<gml:Point srsName =  
"http://crs.opengis.org/crsportal/>http://crs.opengis.org/crsportal/.. /#ep4326">  
  <gml:pos>200 300</gml:pos>  
  
</gml:Point>
```

The attribute srsName points to the CRS definition. This could be in a flat file or managed by a registry. The CRS definition is written in GML (this conforms to ISO 19111 and the CRS WG of OGC). This way we can have ANY NUMBER of CRS. One can have standard CRS definitions via the registry with different organizations being the authority for the registry contents - e.g. one could "put up" a registry for the EPSG database definitions, for Ordnance Survey (UK) etc.

It is a recommended best practice to encode the srsName attribute as a URN and there are specific recommendations for how this URN is to be encoded. Note that the URN reference is intended to be an identifier reference - it is not the intention that CRS information be encoded in the reference - however such non-opaque identifiers (as long as they remain identifiers) can be defined by whoever hosts the particular registry. This is consistent with the URN specification.

The current CRS registry hosted at <http://crs.opengis.org/crsportal> is an early version of the above CRS registry in several respects. In particular:

It is based on the OGC Web Registry Service from OWS 1.2. The Galdos implementation is based on the OASIS ebRIM. This work has been incorporated into the draft OGC Catalog 2.0 Specification.

It is based on the EPSG (content) v6.1

It is based on an almost final version of the CRS definitions in GML (i.e. just before GML 3.0 passed)

Prototype OGC CRS Registry under separate cover.