
Subject: Proposal for semantic constraints for usage of GML elements

Posted by [Marharyta Vyskarka](#) on Thu, 04 Dec 2025 12:03:24 GMT

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Hello everyone,

As I have been working on visualization in railVIVID I noticed an issue with how to interpret functional infrastructure data that is described with multiple GML locations and their elements, and I think some semantic constraints can help with that. In this post I will focus on <lineString> and <point> elements.

As you may know in railML 3.1 and 3.2 it was possible to use multiple <lineString> and <point> elements within the <gmlLocations>. For elements that use <areaLocation> it makes sense, since these coordinates can be aggregated, and by that I mean all the coordinates can be used to determine the outline of the area, etc. However multiple <lineString> would only make sense within a linear element if they are describing the same location in different coordinate systems.

So I propose IS:029:

"<lineString> elements that are defined more than once within the same <gmlLocations> element of a parent functional infrastructure element that used <linearLocation> and belongs to the microscopic level of the infrastructure description must have different EPSG code for each such <lineString>"

For similar reason I also propose IS:030 for spot elements:

"<point> elements that are defined more than once within the same <gmlLocations> element of a parent functional infrastructure element that used <spotLocation> and belongs to the microscopic level of the infrastructure description must have different EPSG code for each such <point>"

Let me know what you think.

Best regards,
Margo Vyskarka
