

We at MTU Aero Engines use a flow solver treating the abutting 1-to-1 connectivity between unstructured grids using face elements (and not vertices !). Therefore we would like to have the possibility to specify the receiving-zone grid faces (2d elements) making up the interface.

The current CGNS specification, SIDS 2.4.6, however, loosely enforces ("should be") the connectivity to be given with respect to the grid vertices for an interface of type *Abutting1to1* or *Abutting*.

The extension that we propose maintains backward compatibility and shouldn't be troublesome: It is in fact a simple matter of convention.

The current convention for a **GridConnectivity_t** states the following:

- a) For *Abutting* or *Abutting1to1* interfaces, *GridLocation* should be *Vertex*: The connectivity information is always given with respect to the grid vertices.
- b) For Overset interfaces, *GridLocation* may be either *Vertex* or *CellCenter*.

The extension modifies only the above-mentioned clause a) and reads as follows:

- a) For *Abutting* or *Abutting1to1* interfaces, *GridLocation* may be either *Vertex* or *FaceCenter*. When *GridLocation* is set to *FaceCenter*, then *PointList* or *PointRange* refer to face elements. Face elements are indexed using different methods depending if the zone is structured or unstructured. For a structured zone, face elements are indexed using the minimum of the connecting vertex indices. For an unstructured zone, face elements are indexed using their element numbering.

Note: This convention is exactly the one used under the node **BC_t**. Thus the users won't be perturbed; this rule already applies elsewhere.

If we can help in any way, please contact Laurent de Vito.

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