FNBr

# Notes about Constraints Data Structure

* A **Constraint** is a relation between a **FrameElement**/**ConstructionElement** and a Entity (**Frame, Construction, ConstructionElement or SemanticType**). A constraint restricts the semantic interpretation of a FE/CE.
* There are six types of constraints:

|  |  |  |
| --- | --- | --- |
| Constraint | RelationType | Semantic |
| Frame | rel\_constraint\_frame | - a FE is mapped to a Frame  - a CE is mapped to a specific Frame  - a Constraint is mapped to a Frame\* |
| Semantic Type | rel\_constraint\_semtype | - a FE is mapped to a Semantic (Ontological) Type |
| Construction | rel\_constraint\_cxn | - a CE is mapped to another Construction |
| Frame Family | rel\_constraint\_framefamily | - a CE evokes a Frame from a Family Frame (the inheritance network of Frame) |
| CE Before | rel\_constraint\_before | - a CE precedes another CE |
| Element | rel\_constraint\_element | - a Constraint is mapped to a FE/CE\* |

\* this is used internally by the system

* A **Constraint** is represented as a Entity. They are registered only as a record on table **Entity** (with the type = CN). There is no specific table for constraints. The **idEntity** is used in **EntityRelation** table, to establish the relation between the *constrained entity* and the *constrainedBy entity*. In **EntityRelation**:
  + idEntity1: idEntity of Constraint (*idConstraint*)
  + idEntity2: idEntity of entity being constrained (*idConstrained*)
  + idEntity3: idEntity of base entity of constraint (*idConstrainedBy*)
* It is possible the base entity of a constrained to be constrained (recursively). In this case, in the table **EntityRelation** we have:
  + idEntity1: idEntity of Constraint (*idConstraint*)
  + idEntity2: idEntity of Constraint being constrained (*idConstrained*)
  + idEntity3: idEntity of base entity of constraint (*idConstrainedBy*)
* A *Constraint Set* is a set of constraints related to a Constrution.
* Example:
  + Frames ids: 1000, 1100
  + Construction ids: 2000, 2100
  + ConstructionElement ids (for each Construction): 2000 (3000, 3001), 2100 (3100, 3101)
  + Suppose we have the following constraints:
    - 3000 > rel\_constraint\_cxn > 2100: this will be registered on EntityRelation as
    - rel\_constraint\_cxn : idConstraint: 4000, idConstrained: 3000, idConstrainedBy: 2100
  + If CE 3100 (from Construction 2100) must be constrained to Frame 1000 (specifically in this constraint set), we have
    - rel\_constraint\_element : idConstraint: 4001, idConstrained: 4000, idConstrainedBy: 3100
    - rel\_constraint\_frame : idConstraint: 4002, idConstrained: 4001, idConstrainedBy: 1000
  + Basically, this specifies a graph, to be used on parsers tasks:
    - 3000 > rel\_constraint\_cxn > 2100 > rel\_constraint\_element > 3100 > rel\_constraint\_frame > 1000