

# Global validation rules

Global validation rules check the result of an element set, while validation rules contained in [predefined validation suites](#) or [active validation suites](#) are dedicated to check a separate element. You can create global validation rules in the same way as other validation rules by defining an appropriate condition in the **Specification** property.

- [How to create validation rules >](#)
- [How to define Constraint expression >>](#)

For example, the *balanced budget* validation rule (Constraint specification is shown in the following figure) is a global validation rule. It is created for the classifier of the *ResearchProject* Class. The *balanced budget* validation rule condition, defined by using OCL2.0 language in the **Specification** property, expresses that the sum of the expenses of all projects must be less than the sum of all *Sponsor* contributions. This validation rule is global because it includes all instances in the model, rather than only the particular instance of *ResearchProject* that violates the rule.



## Sample model

An example of a global validation rule can be found in the **model validation** sample model > *Classifiers Validation Rules* [Class diagram](#). To open this sample do one of the following:

- Download [model validation.mdzip](#).
- Find in the modeling tool <modeling tool installation directory>\samples\product features\model validation.mdzip.

Specification of Constraint balanced budget

Specification of Constraint properties

Specify properties of the selected Constraint in the properties specification table. Choose the Expert or All options from the Properties drop-down list to see more properties.

balanced budget=ResearchProject

Documentation/Hyperlinks

Usage in Diagrams

Inner Elements

Relations

Tags

Constraints

Traceability

balanced budget

Constraint

Name

Specification

Constrained Element

Owner

To Do

Owning Template Parameter

Implementation

Parent Object

Parent Rule

Validation Rule

Error Message

Severity

Abbreviation

Properties: Standard

balanced budget

ResearchProject::allInstances().budget->sum() <= Sponsor::allInstances().contribution->sum()

ResearchProject [Classifiers Validation Rules]

ResearchProject [Classifiers Validation Rules]

Budget not balanced - overbudget by { ResearchProject::allInstances().budget->sum() - Sponsor::allInstances().contribution->sum()}\$

error

BDG

<

Type here to filter properties

>

Close

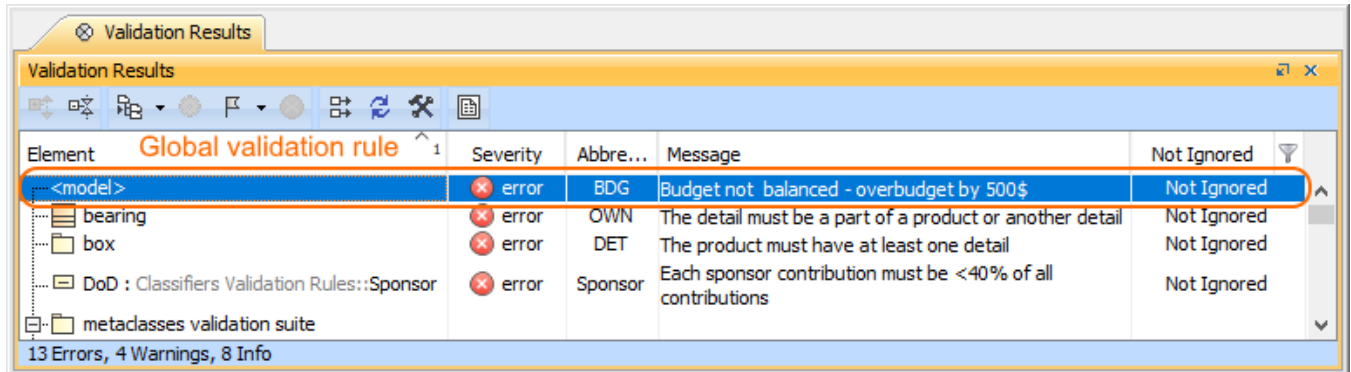
Back

Forward

Help

The specification of the global validation rule named balanced budget.

After the validation finishes, the global validation rule is marked as <model> in the [Validation Results panel](#) > **Element** column. This means that the entire model, not the separate element, violates the rule.



| Element                                     | Severity | Abbre... | Message                                                     | Not Ignored |
|---------------------------------------------|----------|----------|-------------------------------------------------------------|-------------|
| <model>                                     | error    | BDG      | Budget not balanced - overbudget by 500\$                   | Not Ignored |
| bearing                                     | error    | OWN      | The detail must be a part of a product or another detail    | Not Ignored |
| box                                         | error    | DET      | The product must have at least one detail                   | Not Ignored |
| DoD : Classifiers Validation Rules::Sponsor | error    | Sponsor  | Each sponsor contribution must be <40% of all contributions | Not Ignored |
| metaclasses validation suite                |          |          |                                                             |             |

13 Errors, 4 Warnings, 8 Info

The representation of global validation rule in the Validation Results panel.