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# Iguana Visualization

This document will explain how to use Iguana geometry and event visualization offline software.

Iguana was part of CMSSW up to version 3\_10\_1, now CMS is using Fireworks software which was not adapted yet to display geometry for TOTEM. In order to use Iguana in TOTEM, you need to compile and setup CMSSW\_3\_1\_1 workspace !

Assumptions:

- I assume your current directory is [whatever]/CMSSW\_3\_1\_1/src

## STEP 1 - Examples

In order to display geometry of detectors, Iguana need configuration file, which is very similar to one used by `cmsRun` command. There are two sample files:

- RP geometry: `Geometry/TotemRPData/test/iguana_cfg.py`
- T1+T2 geometry: `Geometry/ForwardCommonData/test/iguana_T1T2_cfg.py`

## STEP 2 - Starting iguana

Before starting iguana be sure to have properly established CMSSW workspace (`source ../cmsset_default.sh` and `eval `scram runtime -sh`` commands). Navigate to directory with example configuration files and type (RP case):

```
cd Geometry/TotemRPData/test/  
iguana -p iguana_cfg.py
```

When it asks "Please select configuration", choose "CMSSW". Wait a while.

Click in the menu: "Event" -> "Next event" to initialize geometry producers.

Maximize inner window with 3D view (if minimized).

## STEP 3 - Detector display

On the left hand there is an object tree representing XML geometry.

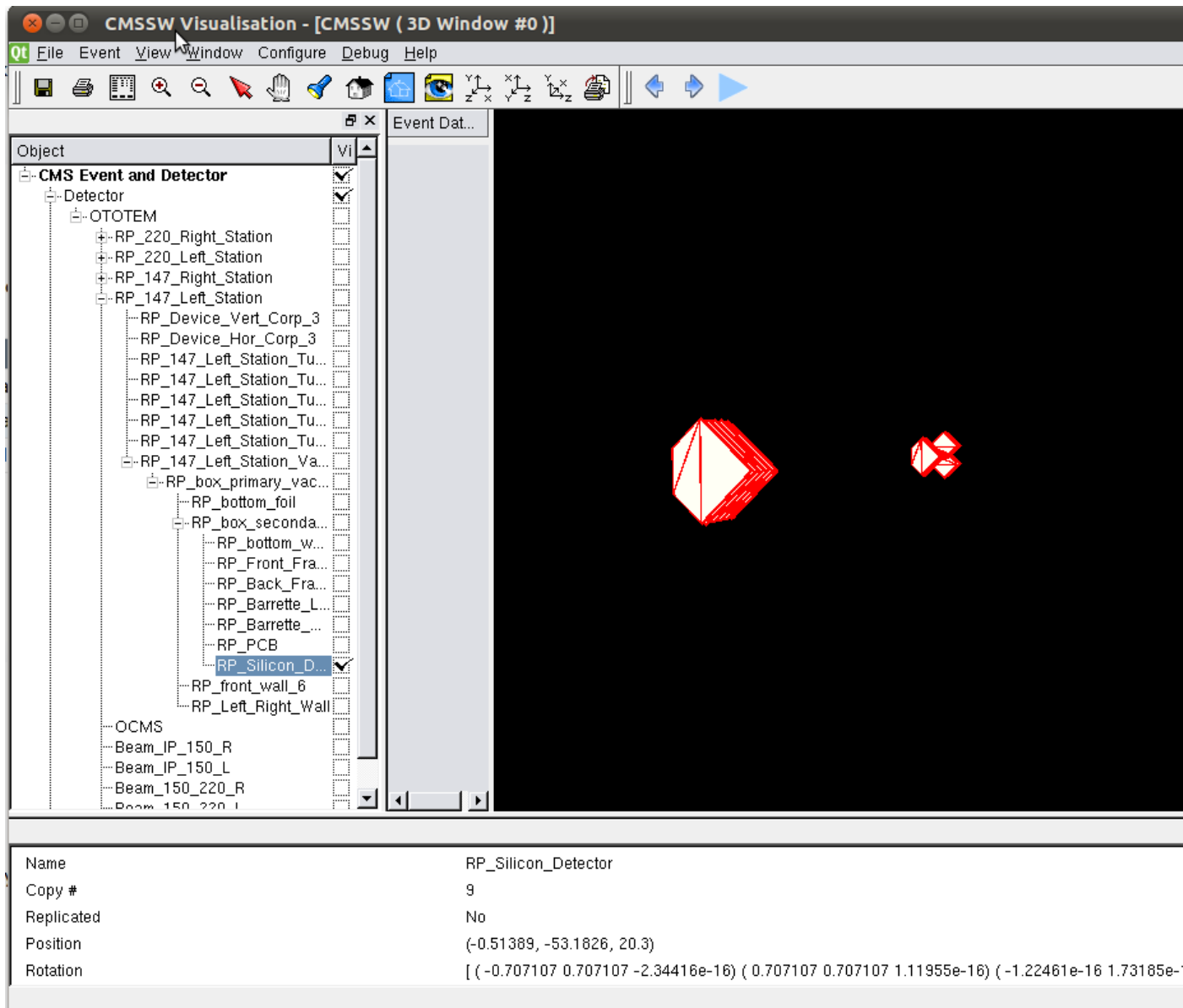
### Example 1 - RP

Right click, select "Enable children" and click "+" to expand for following objects:

```
"RP_220_Right_Station" \ "RP_220_Right_Station_Vacuum_5" \ "RP_box_primary_vacuum" \  
"RP_box_secondary_vacuum"
```

Select "RP\_Silicon\_Detector" (tick should appear on the right)

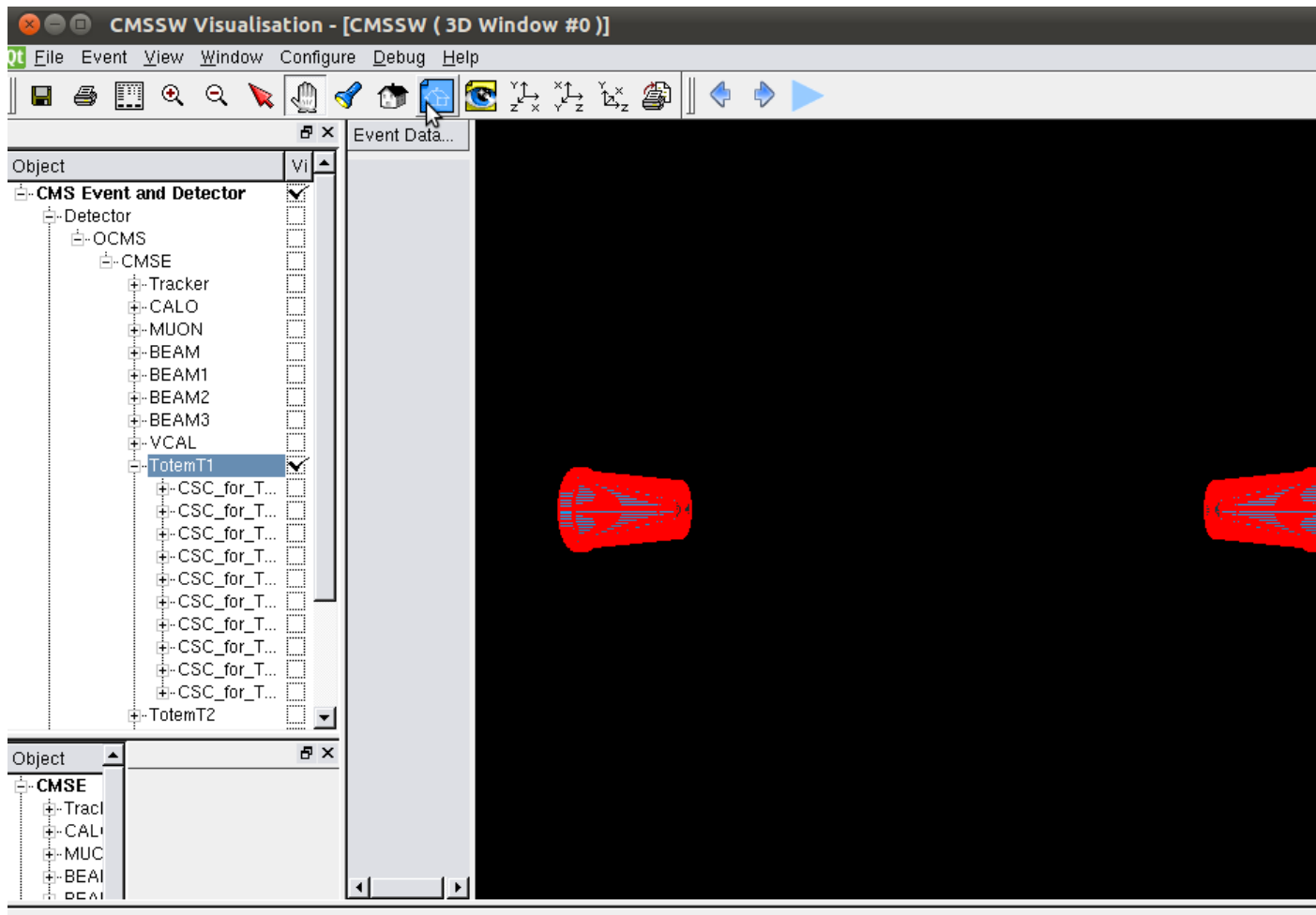
Click icon with eye and zoom in to see RP detectors.



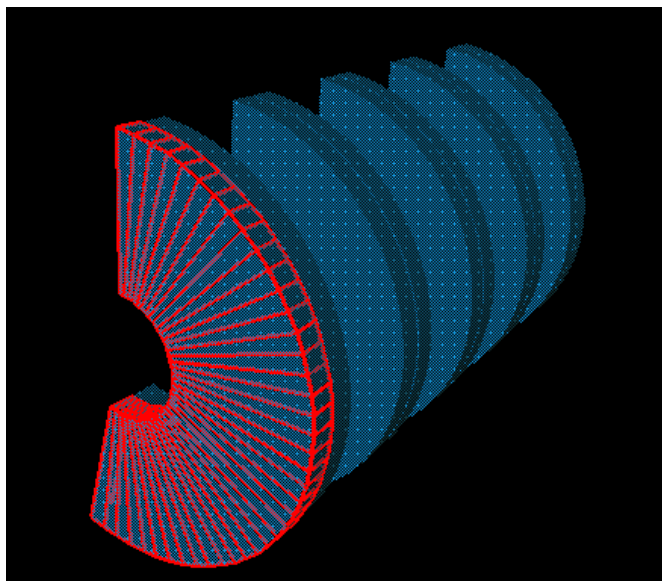
## Example 2 - T1 + T2

Right click, select "Enable children" and click "+" to expand for "CMSE"

Select "TotemT1" or "TotemT2" (tick should appear on the right), you can also continue procedure to see subunits of T1 and T2.



Name	TotemT1
Copy #	1
Replicated	No
Position	(0, 0, 0)
Rotation	[ ( 1 -1.22461e-16 -6.12303e-17) (-6.12303e-17 1 -6.12303e-17) (-1.22461e-16 -1.22461e-16 1) ]



## Iguana working remotely via ssh

In general, it's possible to run Iguana remotely via ssh -X. However, it makes the display MUCH slower, so I do recommend to work with Iguana locally.

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This topic: TOTEM > CompOfflineVisualizationIguana

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