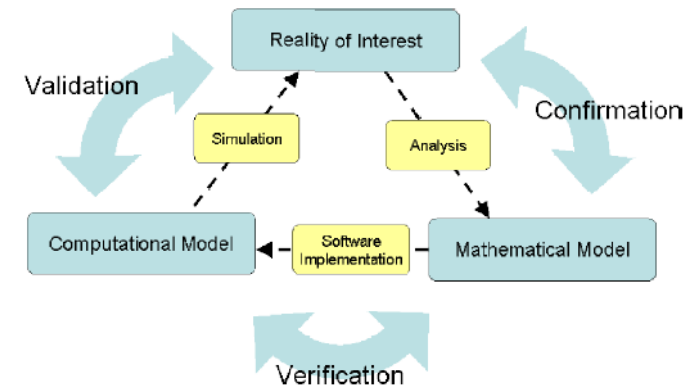


VET-RACK R & D AND FEATURES

- 19"-standard based dimensioning
- light structure
- modularic
 - you can connect several racks together to same isolation base
 - you can freely choose required equipment, shock isolators, vibration dampers, rack shelves etc.
 - you can also order the system fully equipped, with equipment installations
 - choose installation depth and height and we manufacture it
 - rigid and lasting. Welded steel structure
 - takes little space
 - can be reliably used as a part of virtual modelling
 - calculation methods and structure have been verified and validated (V & V)
 - Tested computationally, in agitator, and several practice military applications, and e.g. minetests



Ref. Research report KOTE 071

5.2 Boundary conditions

The rack was hung with steel wires from 2 corner points (see Figure 3) and the steel wires were again connected to rubber ropes attached to roof.

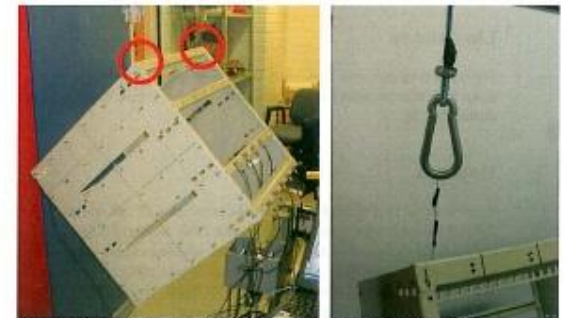


Figure 3. Boundary condition of the rack during the modal analysis.

Ref. Research report VTT-R-07267-10

Are MIL and Stanag- requirements met?

The way we work:

- Define e.g. the magnitude of excitation to the vessel and VET-rack (mine explosion or similar response)
- Calculate responses from shock to rack protected with wire rope isolators (as a rigid piece) with WIROSI-program
- VET-rack's FEM-model is given isolators damped excitations as impulse and calculate response to the rack and its equipment (usually excitation and tension)

5.1 Geometry

A total number of 138 measurement points were selected to represent the rack.

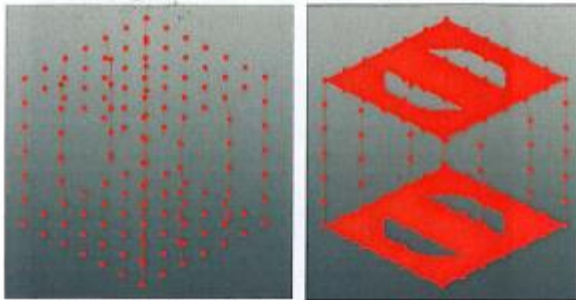


Figure 2. Geometry of the studied rack.

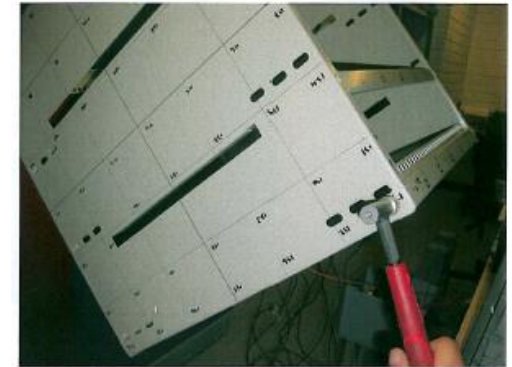
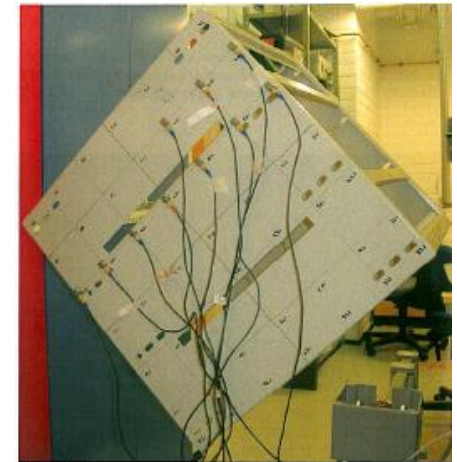


Figure 4. Excitation point and modal hammer.



Ref. Research report VTT-R-07267-10

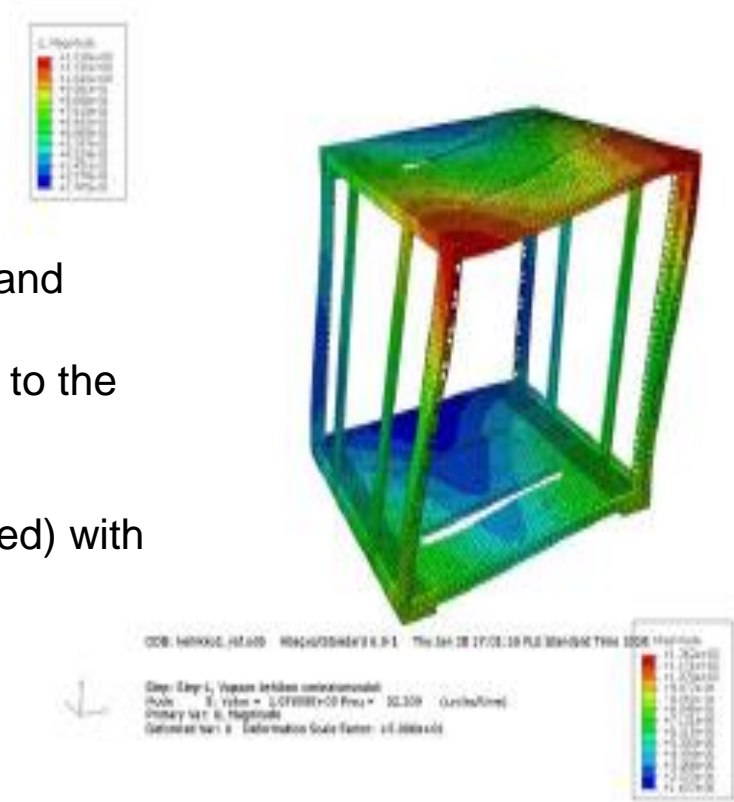
Are MIL and Stanag- requirements met?

From results can be verified:

VET-rack´s endurance for given load (rack´s stiffness and tension generated in it)

- Installed products spec comparison to loads directed to the rack
- In demanding situations, where it´s difficult to avoid interactions (e.g. extremely stiff isolators has to be used) with VET- modelling isolators can be optimized and rack´s equipment installed with simulation calculations.

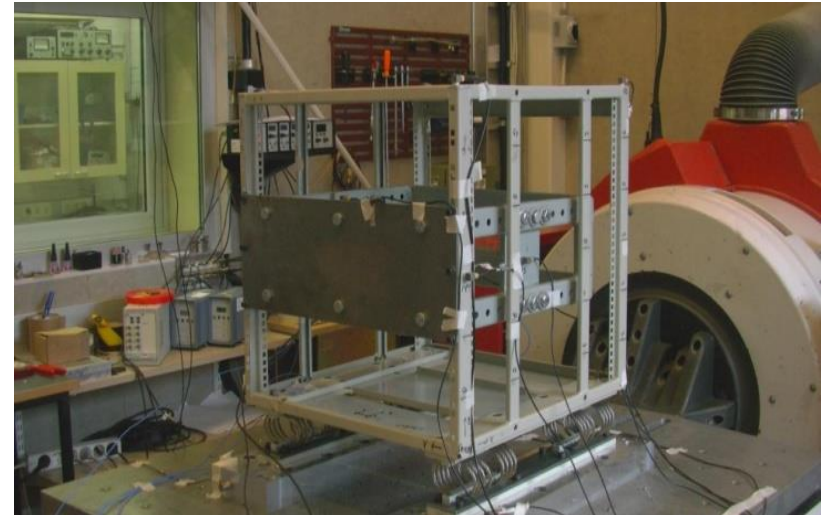
VET rack´s exact FEM-model enables complete 3D dynamic analysis at once even for more complex measured impulses



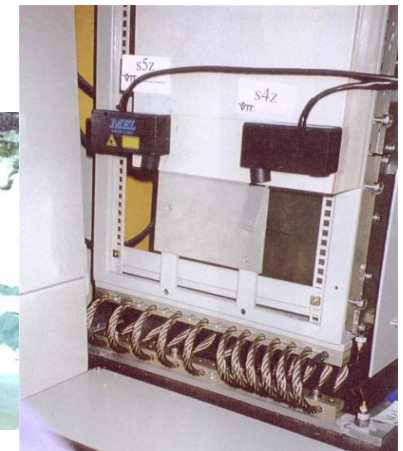
Ref. Research report VTT-R-07267-10

In use...

- Gives great protection to COTS-equipment in demanding operational environments
- Delivered in to several MIL-applications
- Choose correct protection level:
 - Wire rope isolator
 - ADDI-additional protection
 - Elastomer vibration isolation
 - Combinations from above, hybrids



Electrodynamic agitator



Research report
VTT-R-07267-10