

Positional data options for the Near Detectors

Discussion topics

- Rotary encoder
- Laser beam distance measuring device
- Use Hilman motors as an encoder



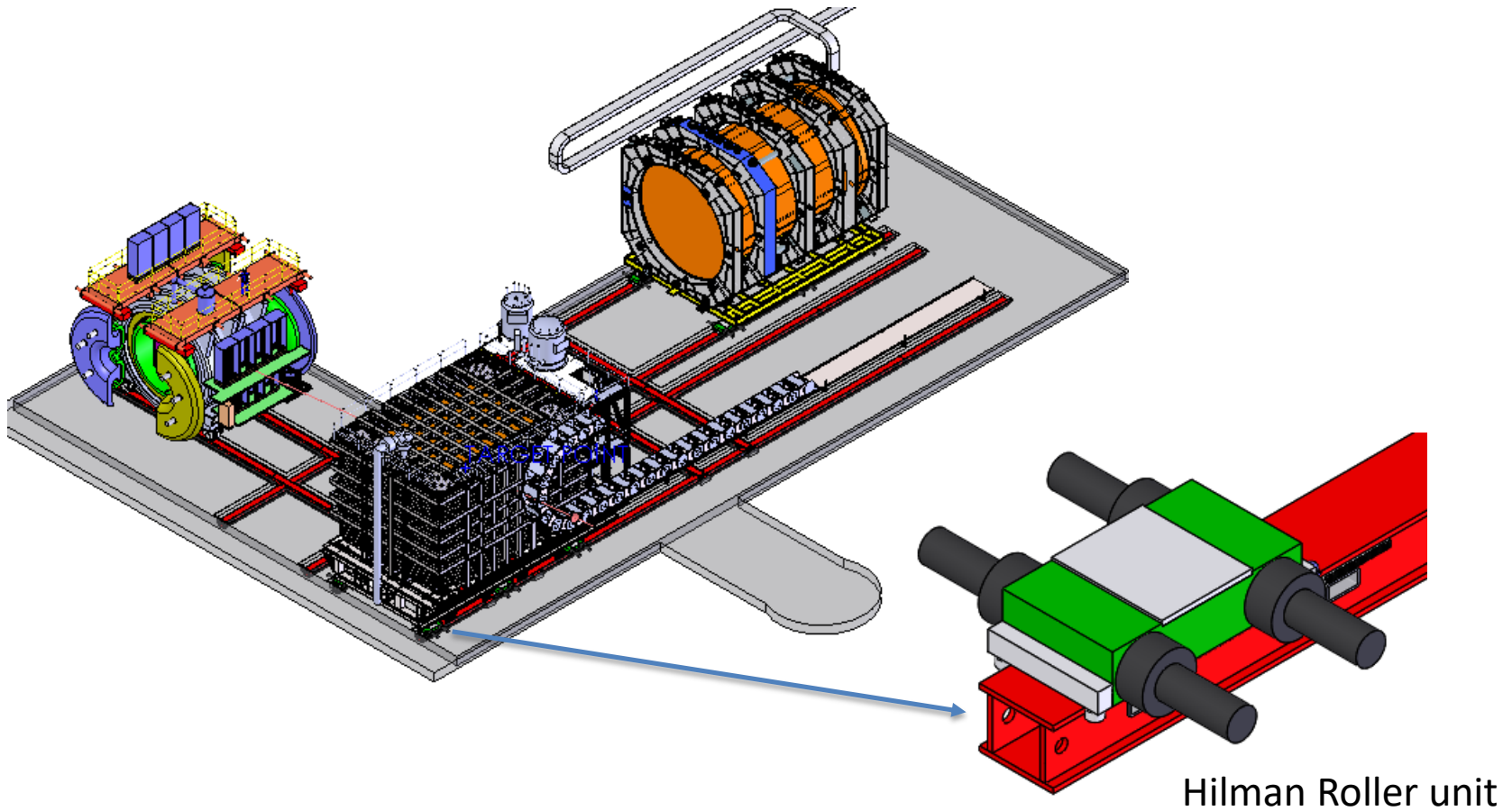
General description

- Unmanned, remote control movement
- Movement max speed is 10.2 cm/min
- The distance traveled 30.5 meters each way
- Position accuracy and repeatability desired ~mm level

- How best to determine the stopped position?

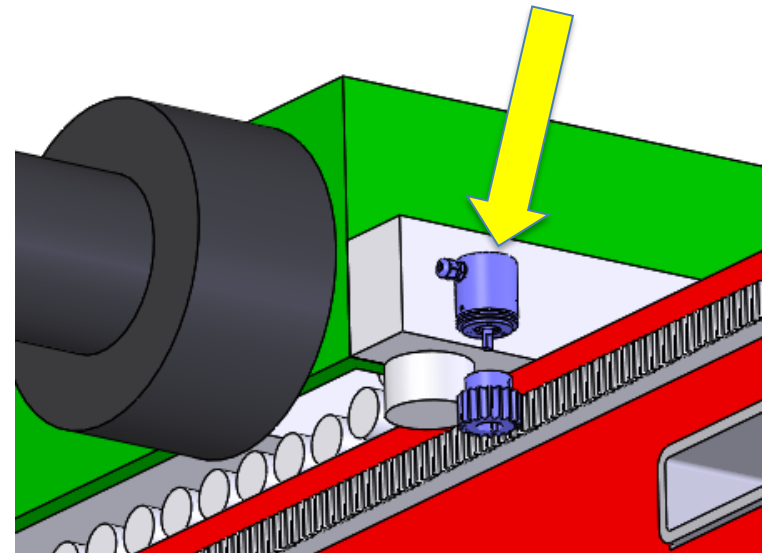
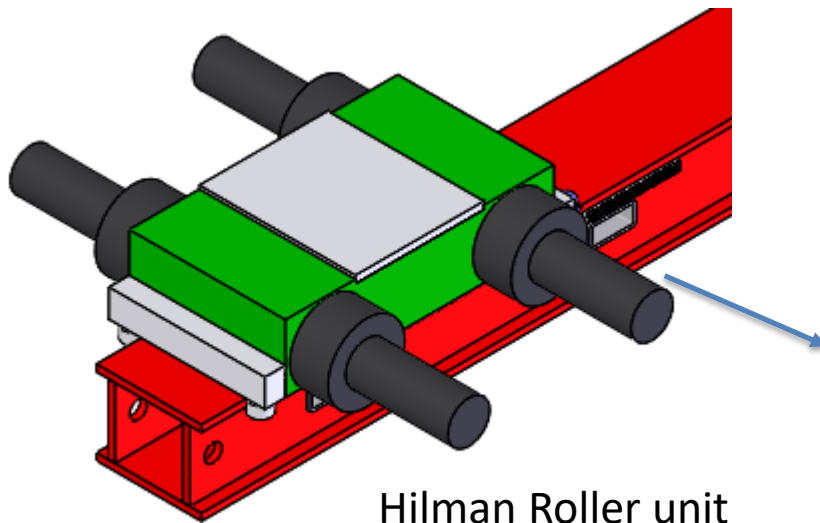


Rotary encoder



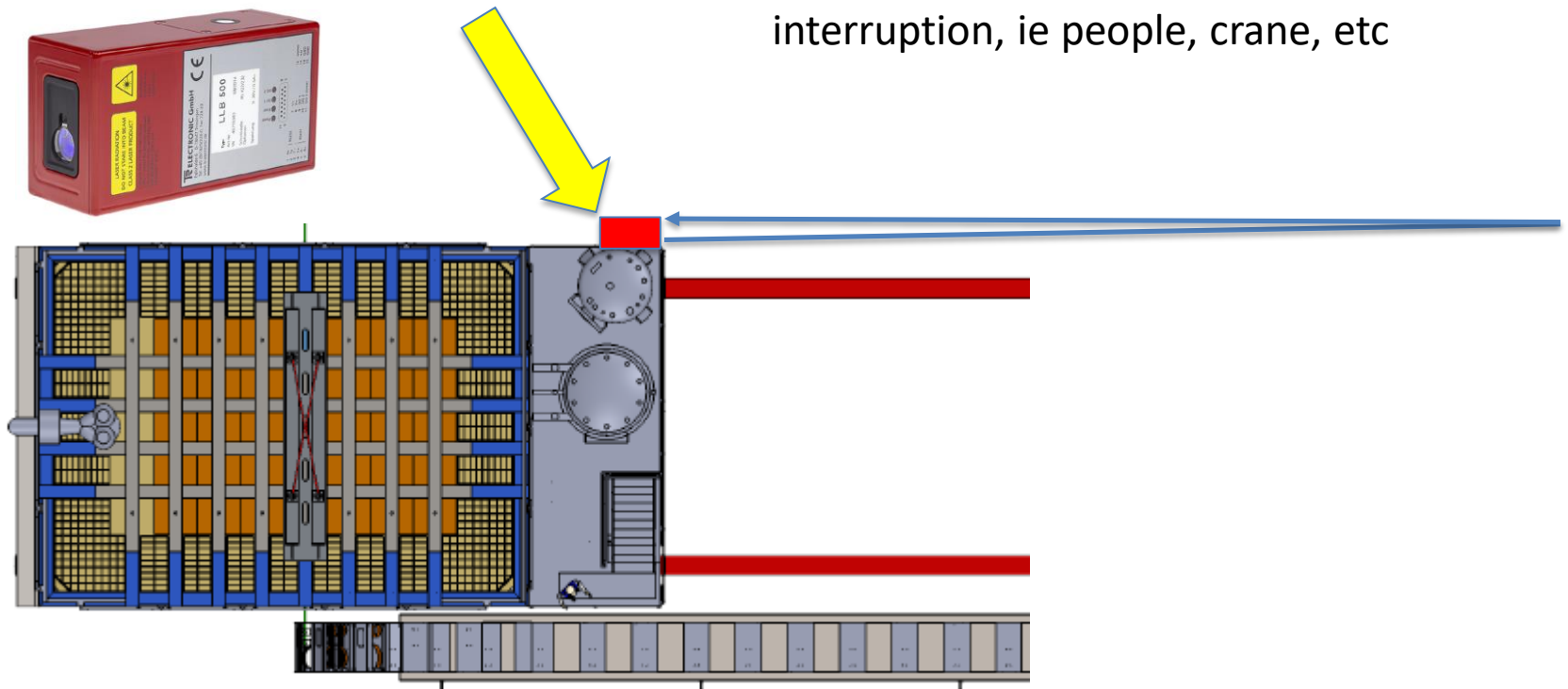
Rotary encoder

- Rotary encoder has hundreds of outputs per revolution
- Accuracy can be within a mm
- Low cost, ~\$1000
- Needs to be protected from debris
- Mount on a spring loaded bracket to tolerate surface fluctuations



Laser sensor

- Laser sensor
- mm level accuracy
- Medium cost ~\$3000
- May have issues with beam interruption, ie people, crane, etc



Other options?

- It is possible to use the Hilman servomotors as an encoder
- This approach provides a very robust option
- Accuracy probably very good but unknown
- May need to have 2 redundant systems

