



Science & Technology Facilities Council

ISIS

ISIS Overview

Leigh Perrott CEng - ISIS

Design and Engineering of Neutron Instruments Meeting
Sept 2012

- Facility overview.
- Engineering structure.
- ISIS instrument facilities.
- Recent major projects.
- Project management.
- Future developments.

ISIS history



Building NIMROD



Science & Technology Facilities Council

ISIS

ISIS history



NIMROD



Science & Technology Facilities Council

ISIS

ISIS history



Building TS1



Science & Technology Facilities Council

ISIS

ISIS history



TS1 Complete



Science & Technology Facilities Council

ISIS

ISIS history



Moving earth for TS2



Science & Technology Facilities Council

ISIS

ISIS history



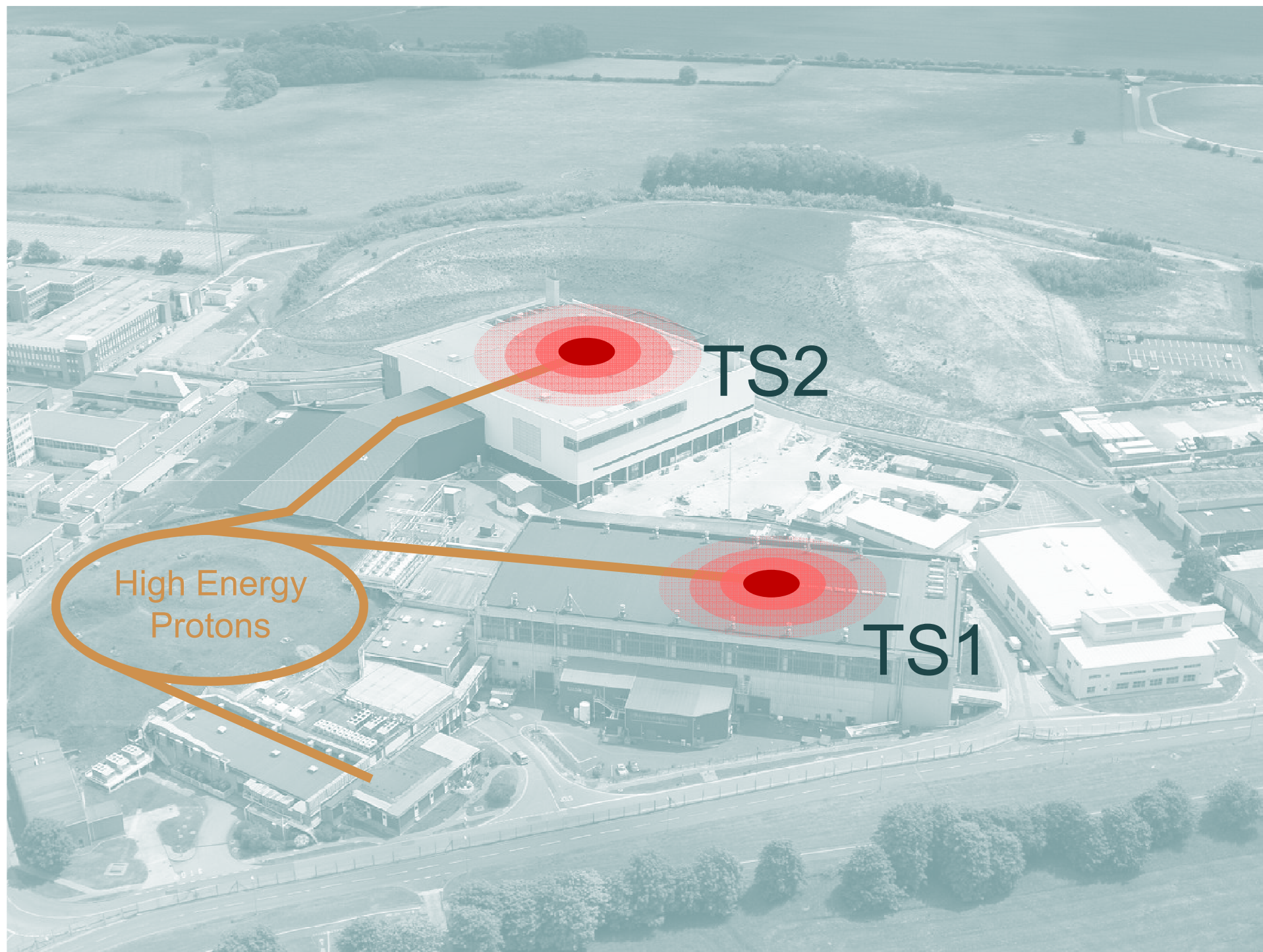
Building TS2

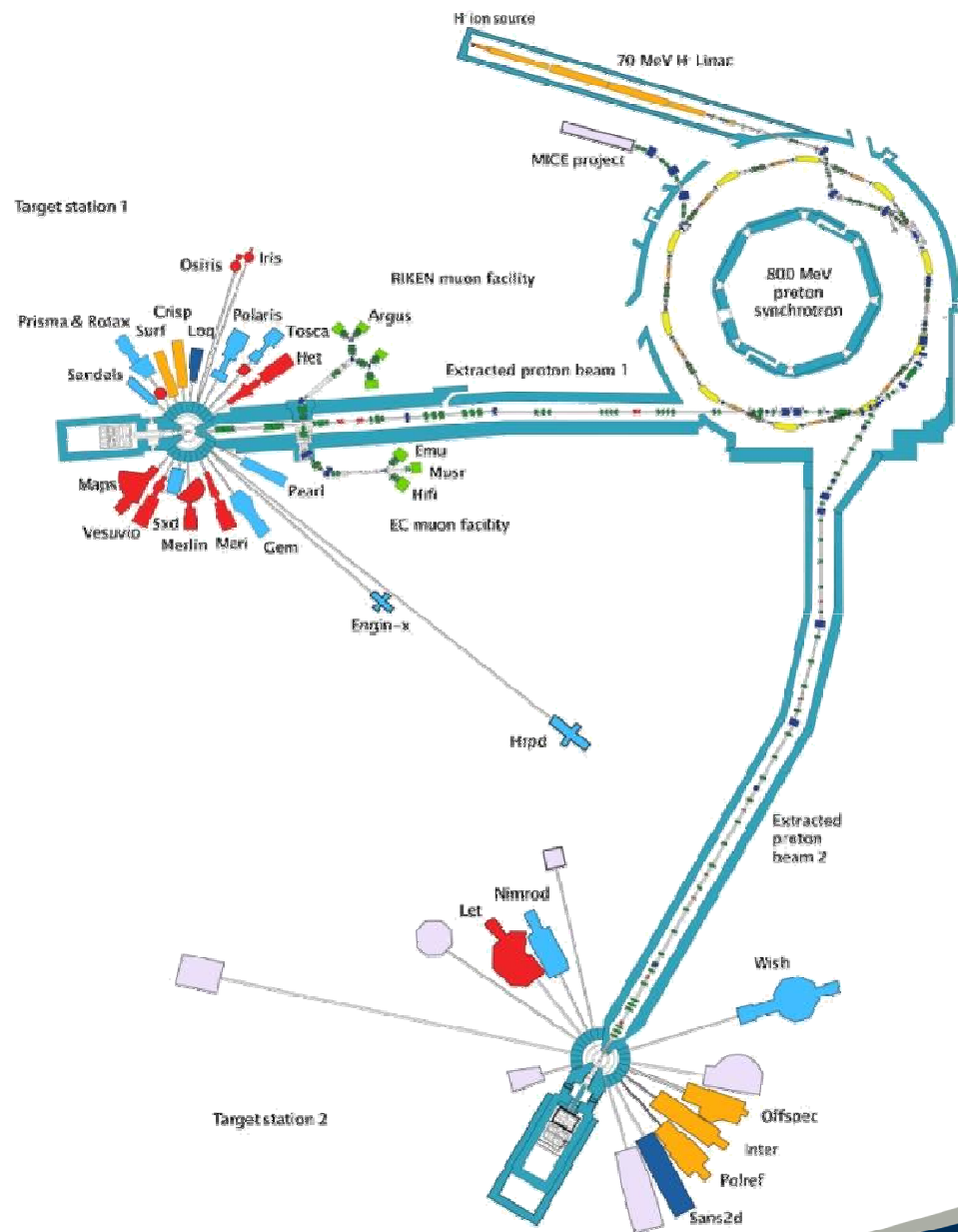


Science & Technology Facilities Council

ISIS

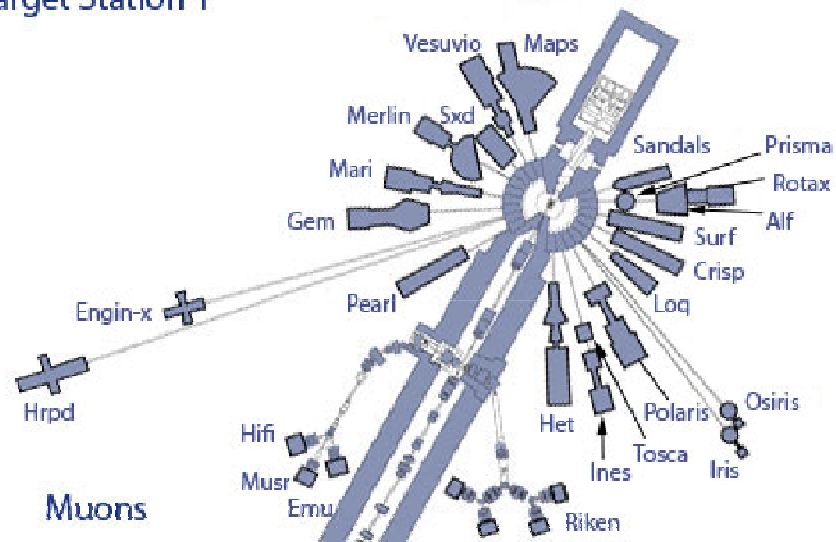




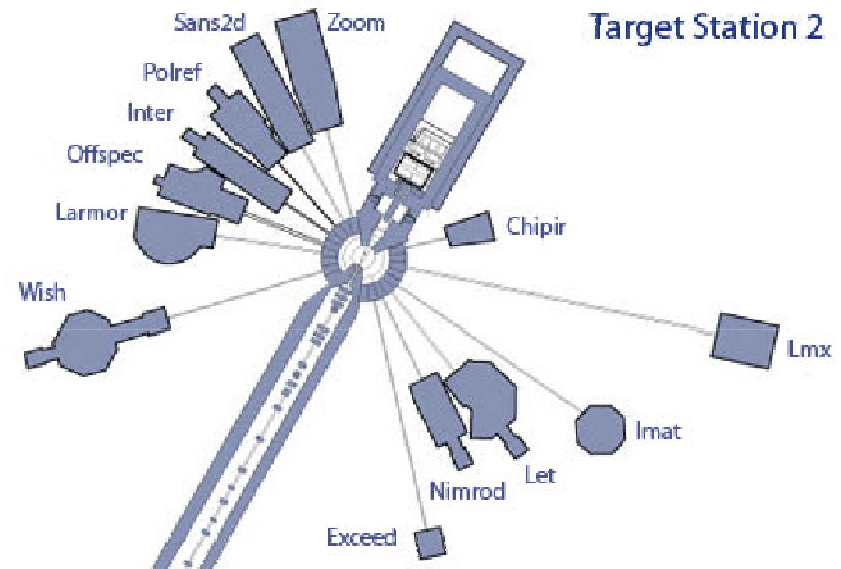


ISIS Layout

Target Station 1



Target Station 2



Science & Technology Facilities Council

ISIS

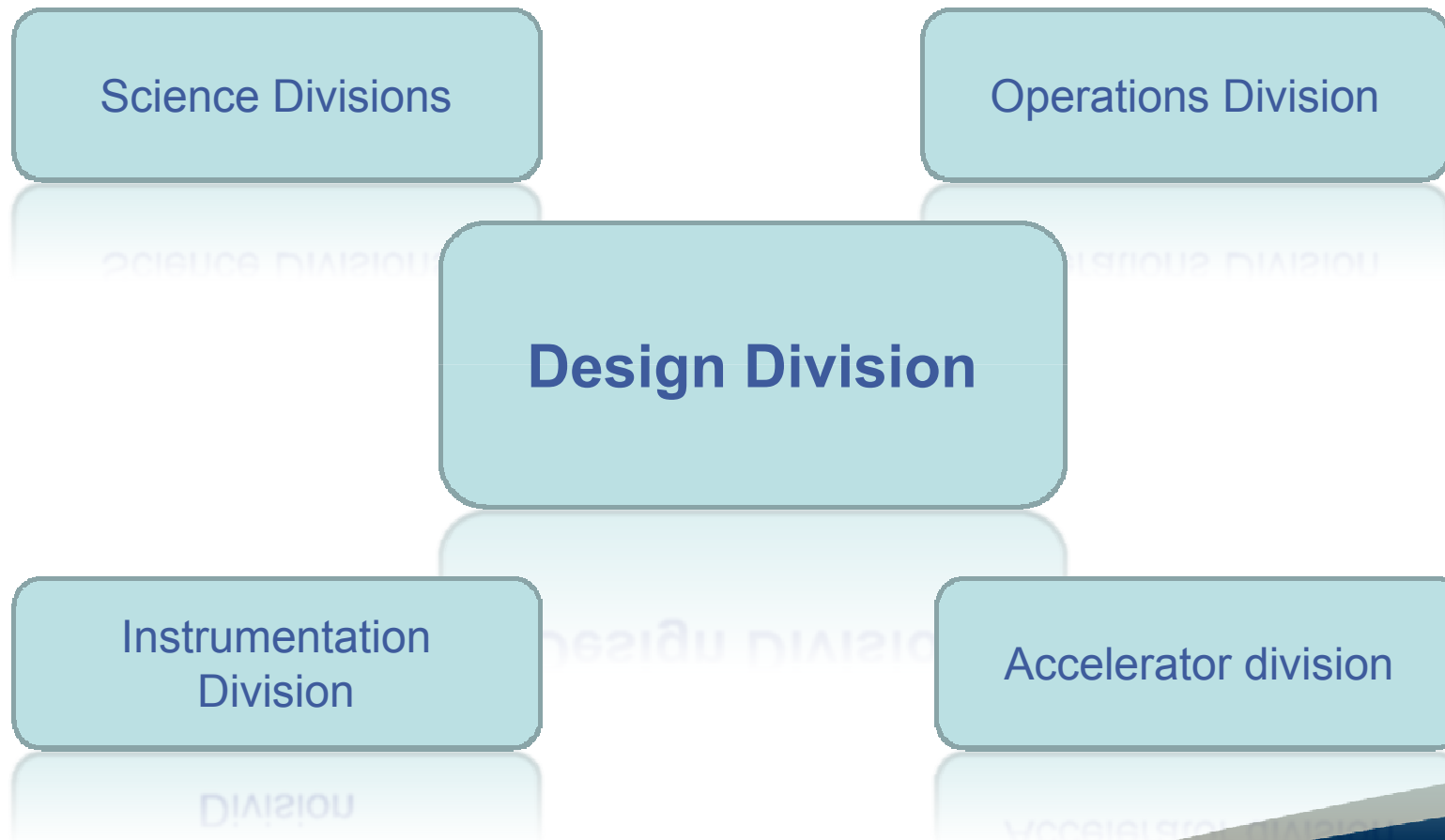
Engineering structure



Science & Technology Facilities Council

ISIS

ISIS organisation



Science & Technology Facilities Council

ISIS

ISIS Engineering organisation

Design Division

Accelerator Design

Target Design

Instrument
Design

Electrical Design



Science & Technology Facilities Council

ISIS

ISIS Instrument design

Design Division

TS2 Phase 2

Chopper Design

**Detector and Beam
lines**

Sample Environment

Motion control

Detectors

Computing



Science & Technology Facilities Council

ISIS

Engineering Facilities



Science & Technology Facilities Council

ISIS

Chopper Lab



Science & Technology Facilities Council

ISIS

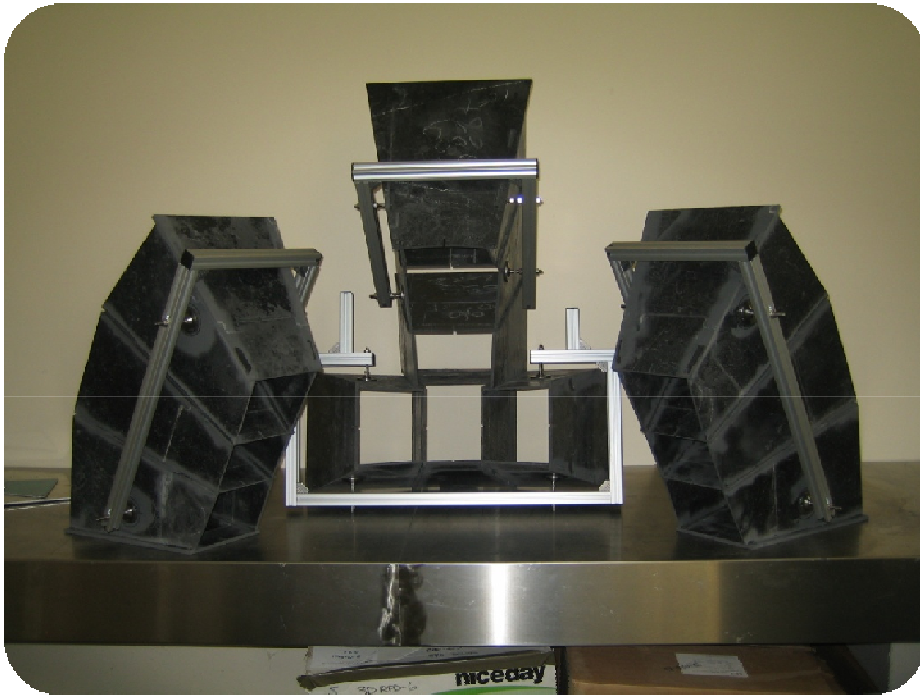
Space Precision Development



Science & Technology Facilities Council

ISIS

Advanced Materials Lab



PEARL Detector collimation



Collimation



Science & Technology Facilities Council

ISIS

Magnet and Sample Equipment Lab



PEARL Detector collimation



Science & Technology Facilities Council

ISIS

Chopper Controls



PEARL Detector collimation



Science & Technology Facilities Council

ISIS

Detector Group



LET 4m Detector tubes



Science & Technology Facilities Council

ISIS

Ops and IDD motion control



LET 4m Detector tubes



Science & Technology Facilities Council

ISIS

Recent successes

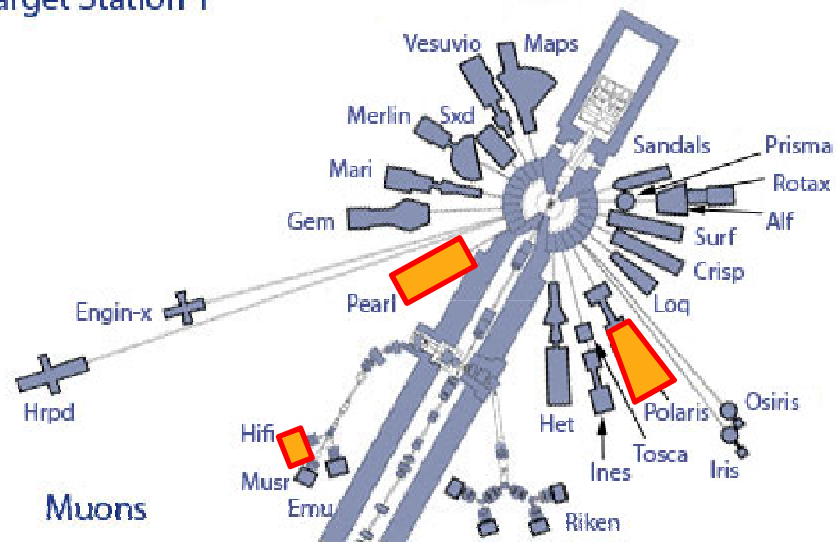


Science & Technology Facilities Council

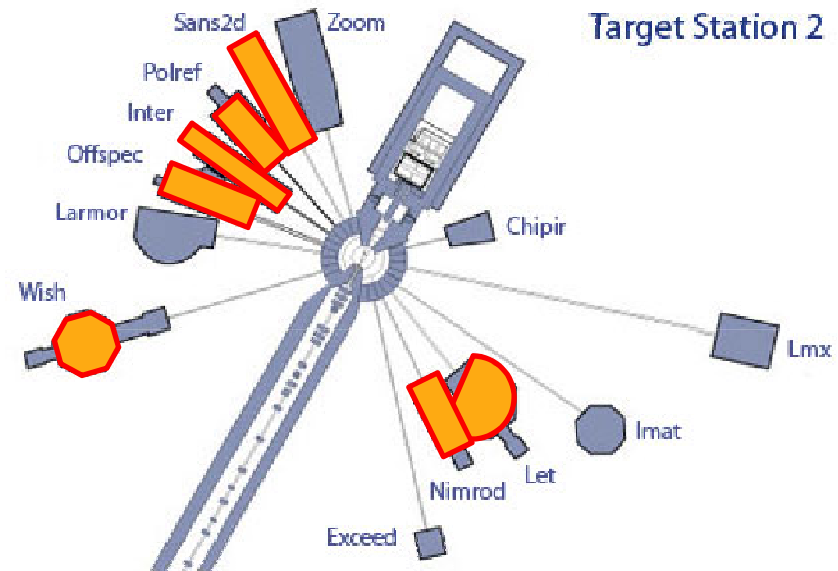
ISIS

ISIS Recent projects TS1/TS2

Target Station 1



Target Station 2

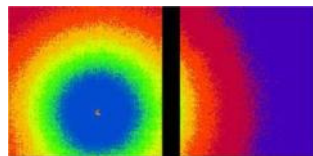
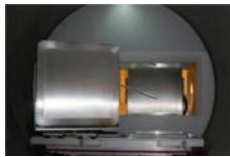
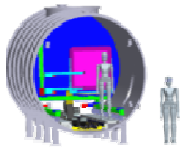


Science & Technology Facilities Council

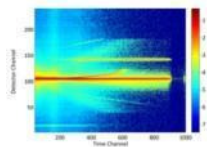
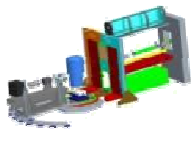
ISIS

ISIS TS2 – Phase 1

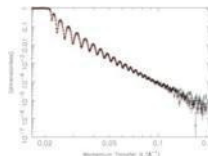
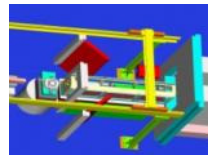
SANS2D



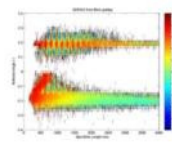
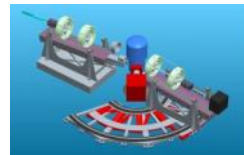
POLREF



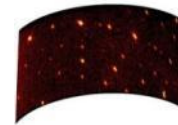
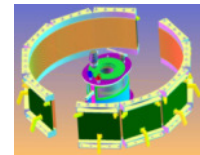
INTER



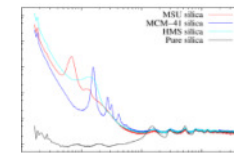
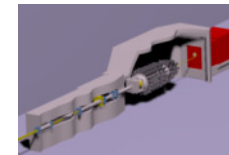
OFFSPEC



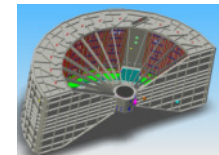
WISH



NIMROD



LET



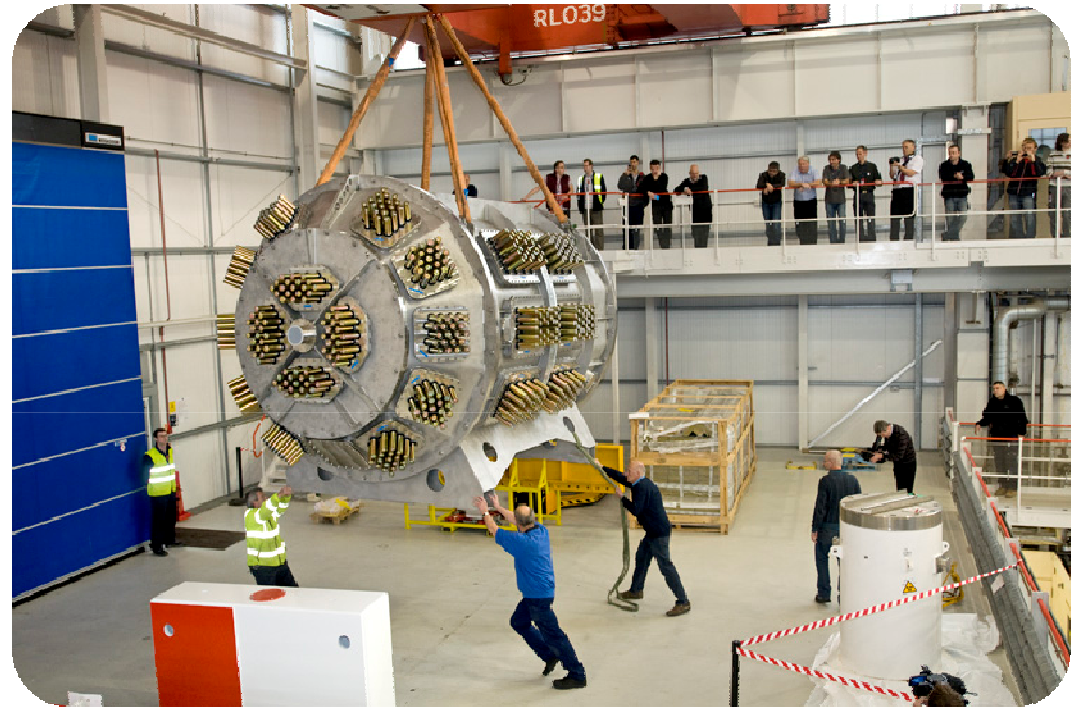
Science & Technology Facilities Council

ISIS

POLARIS



Sweden Collaboration



Science & Technology Facilities Council

ISIS

OFFSPEC



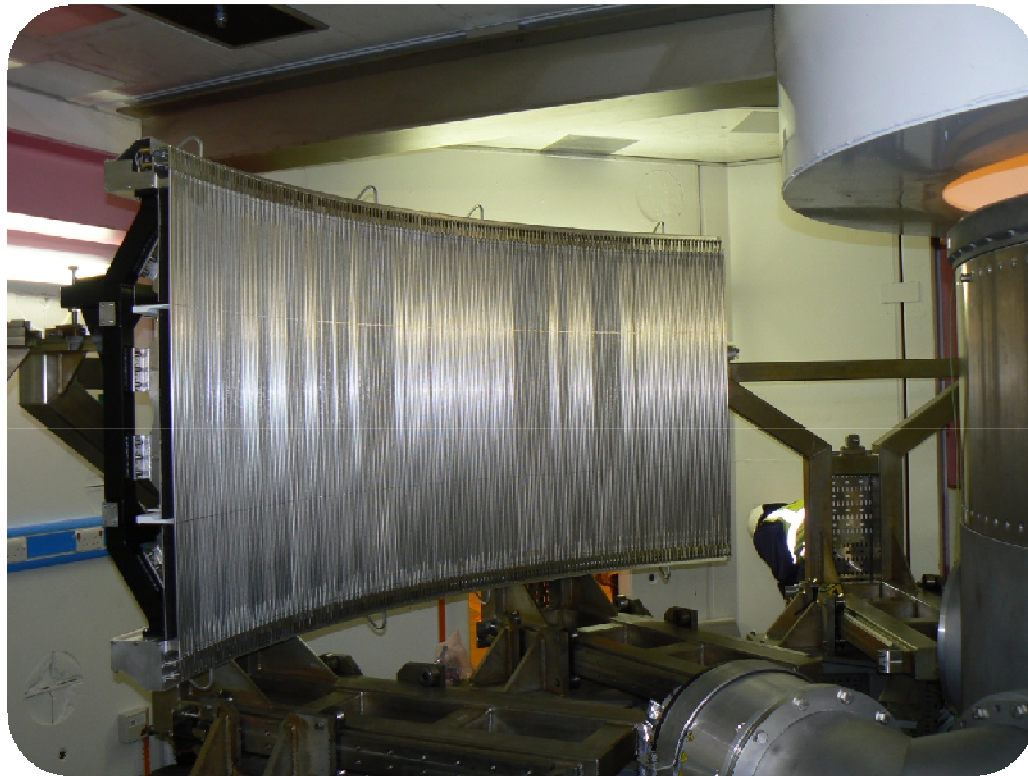
DELFT Collaboration



Science & Technology Facilities Council

ISIS

WISH



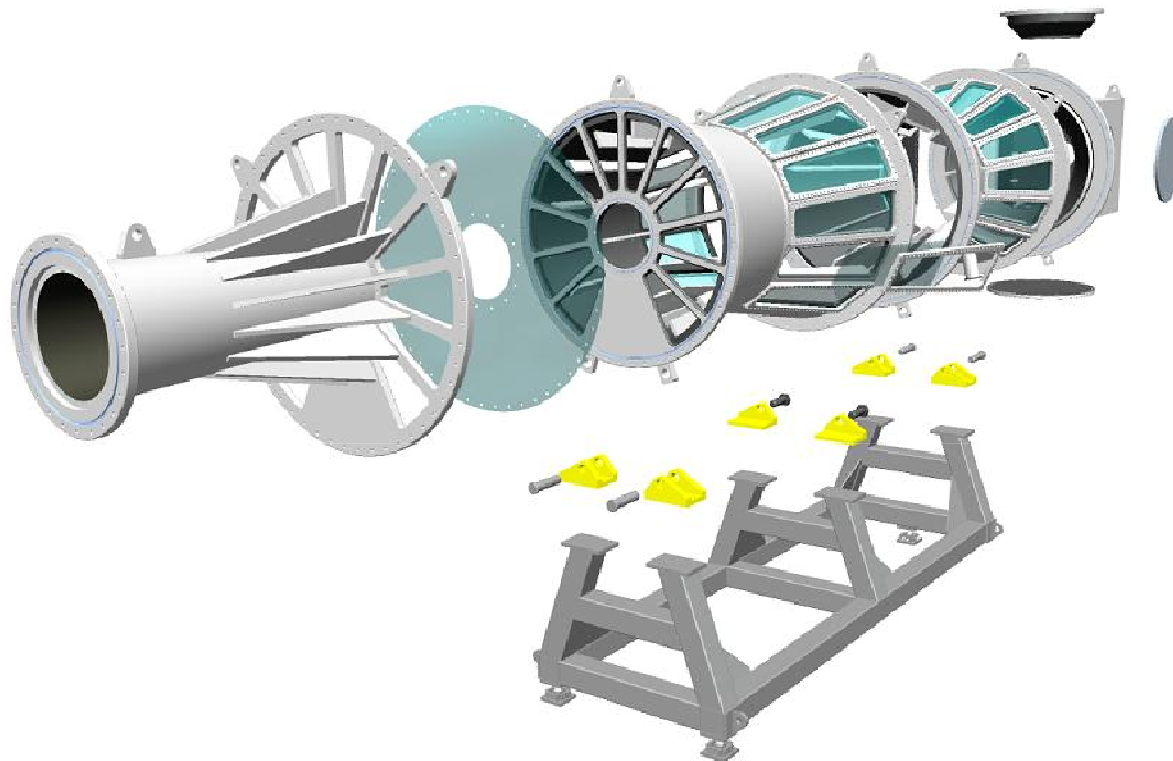
BILBAO collaboration - Technica



Science & Technology Facilities Council

ISIS

NIMROD



Italian Collaboration.



Science & Technology Facilities Council

ISIS

SANS2D



Science & Technology Facilities Council
ISIS

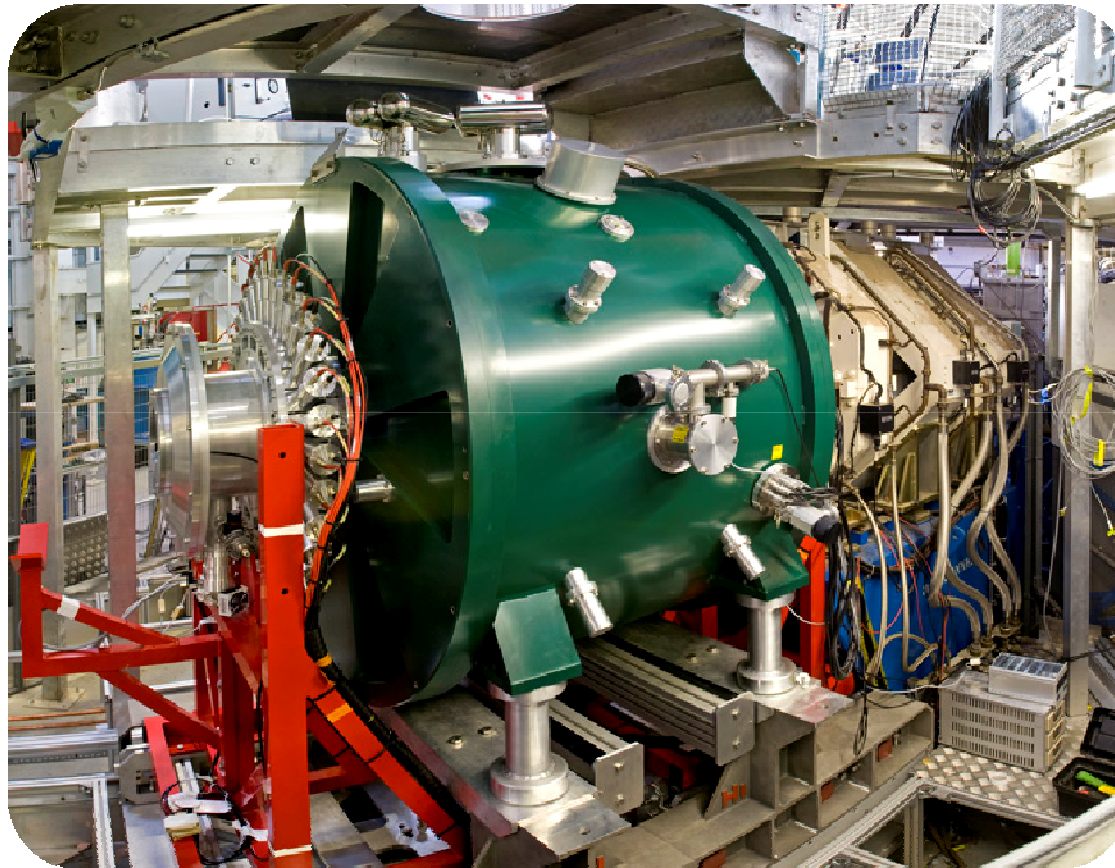
LET



Science & Technology Facilities Council

ISIS

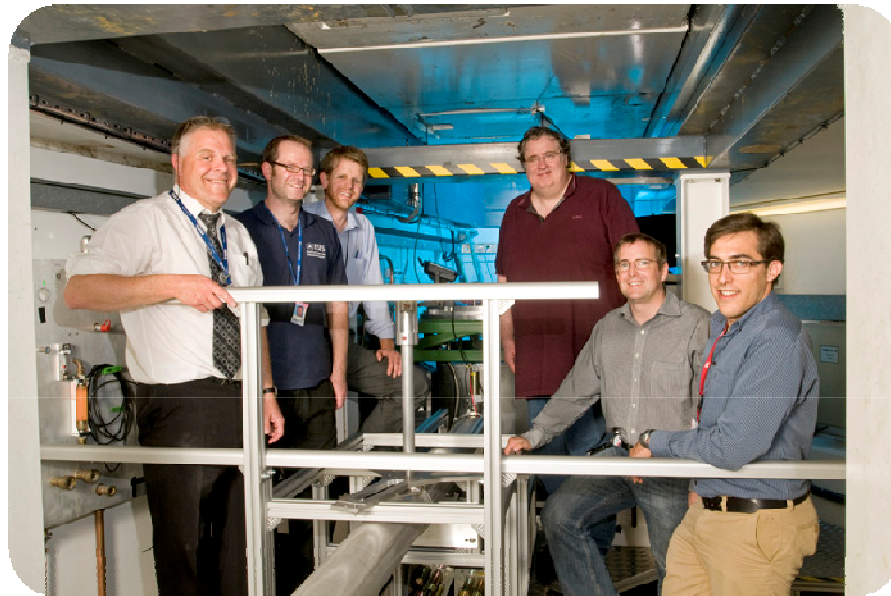
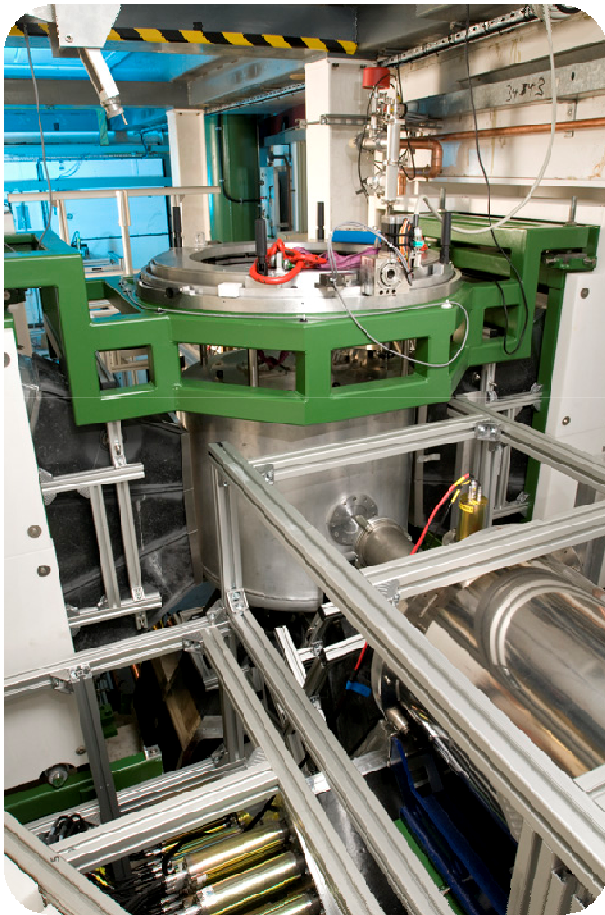
HIFI Muon instrument



Science & Technology Facilities Council

ISIS

PEARL Upgrade



Bilbao collaboration.



Science & Technology Facilities Council

ISIS

ISIS Fermi Chopper



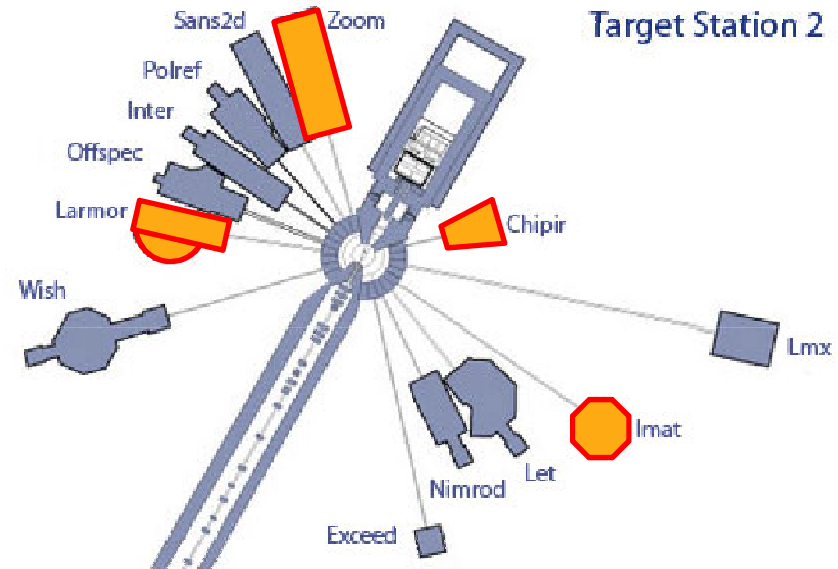
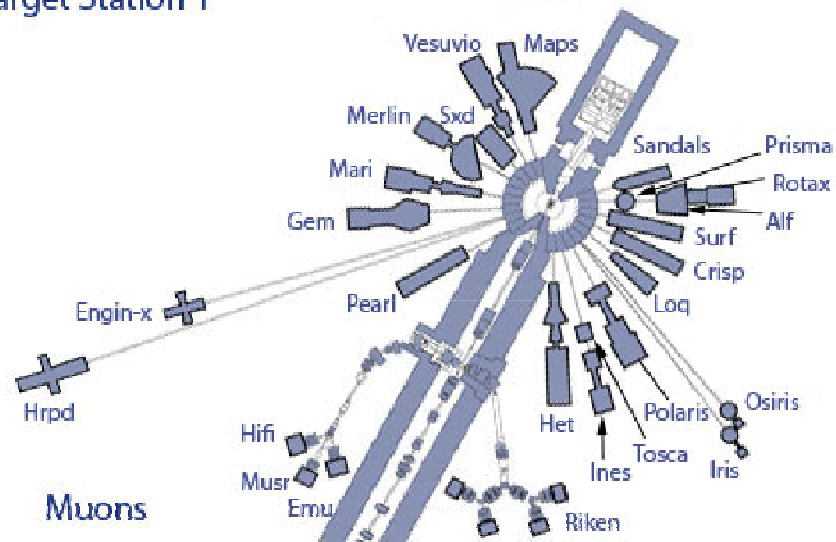
SKF Drive



Science & Technology Facilities Council

ISIS

ISIS Current projects – Phase 2

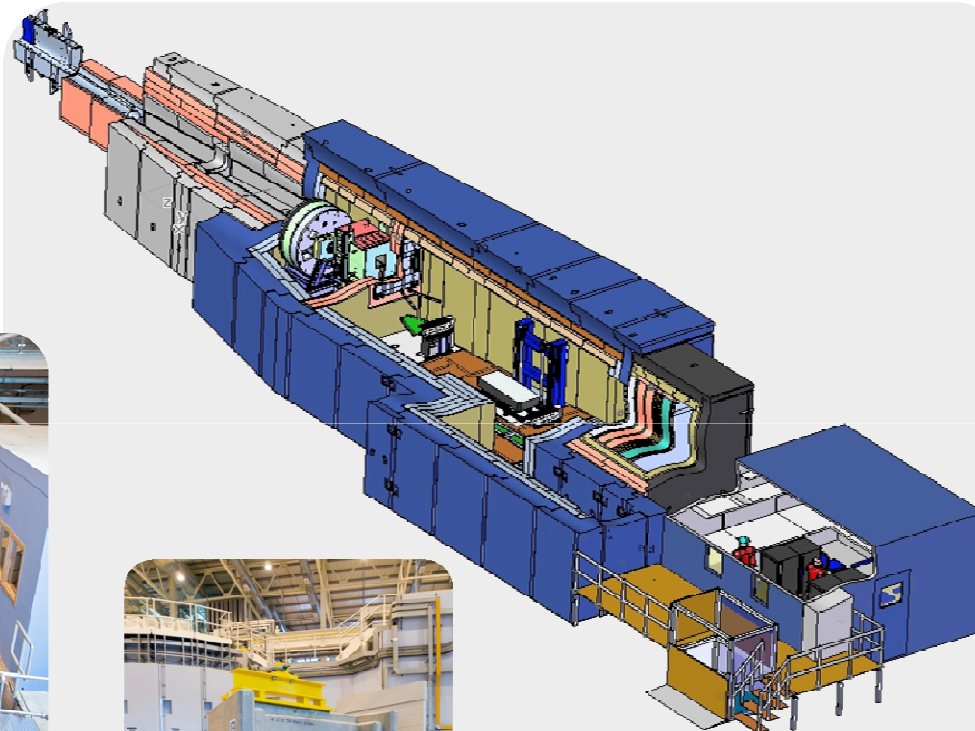


PM – James Treadgold

CHIPIR



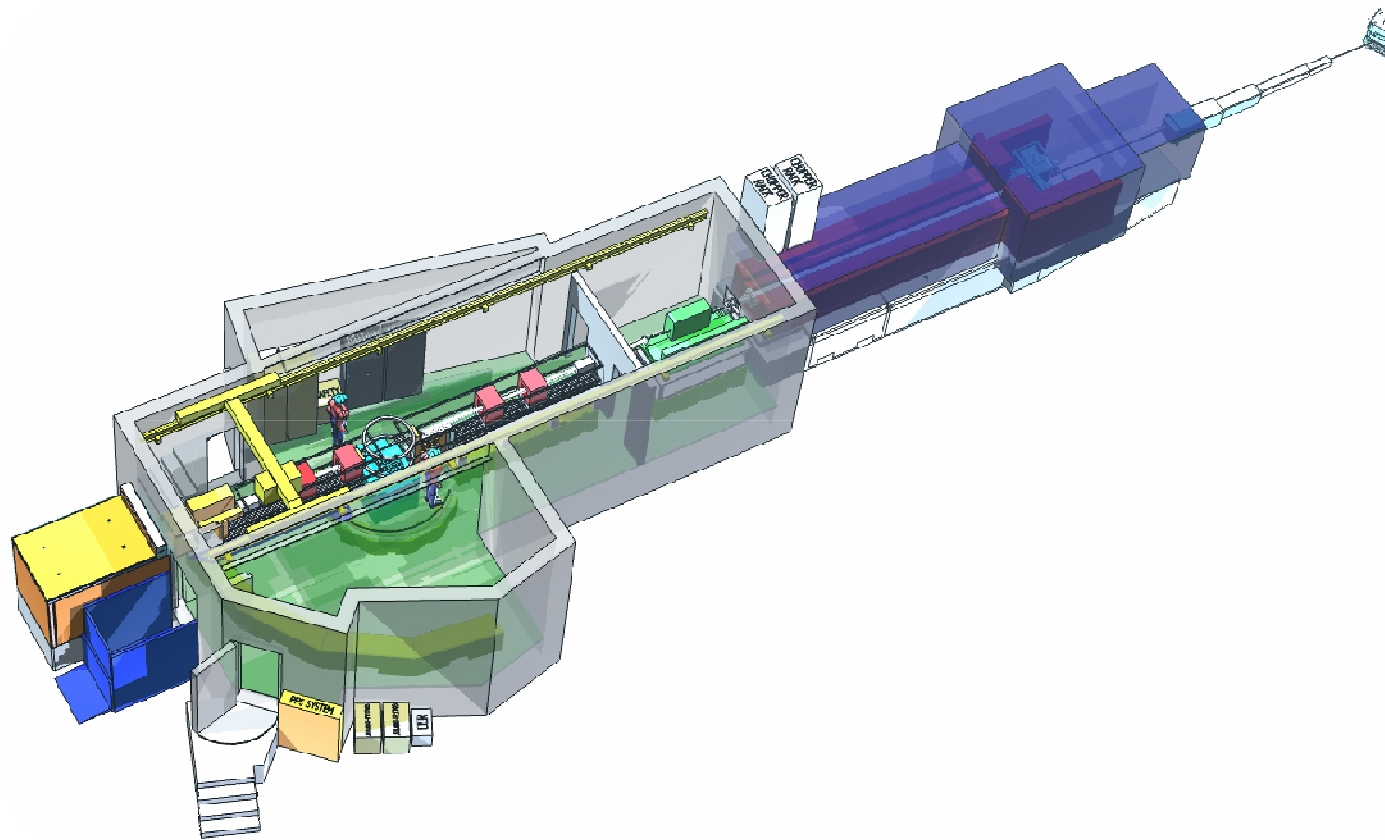
Fast Neutron Facility



Science & Technology Facilities Council

ISIS

LARMOR



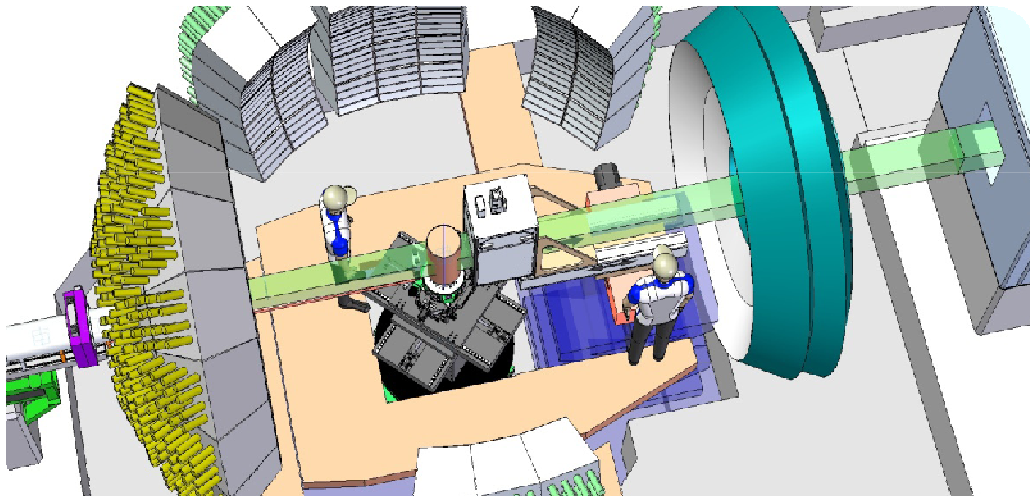
Small angle diffraction



Science & Technology Facilities Council

ISIS

IMAT



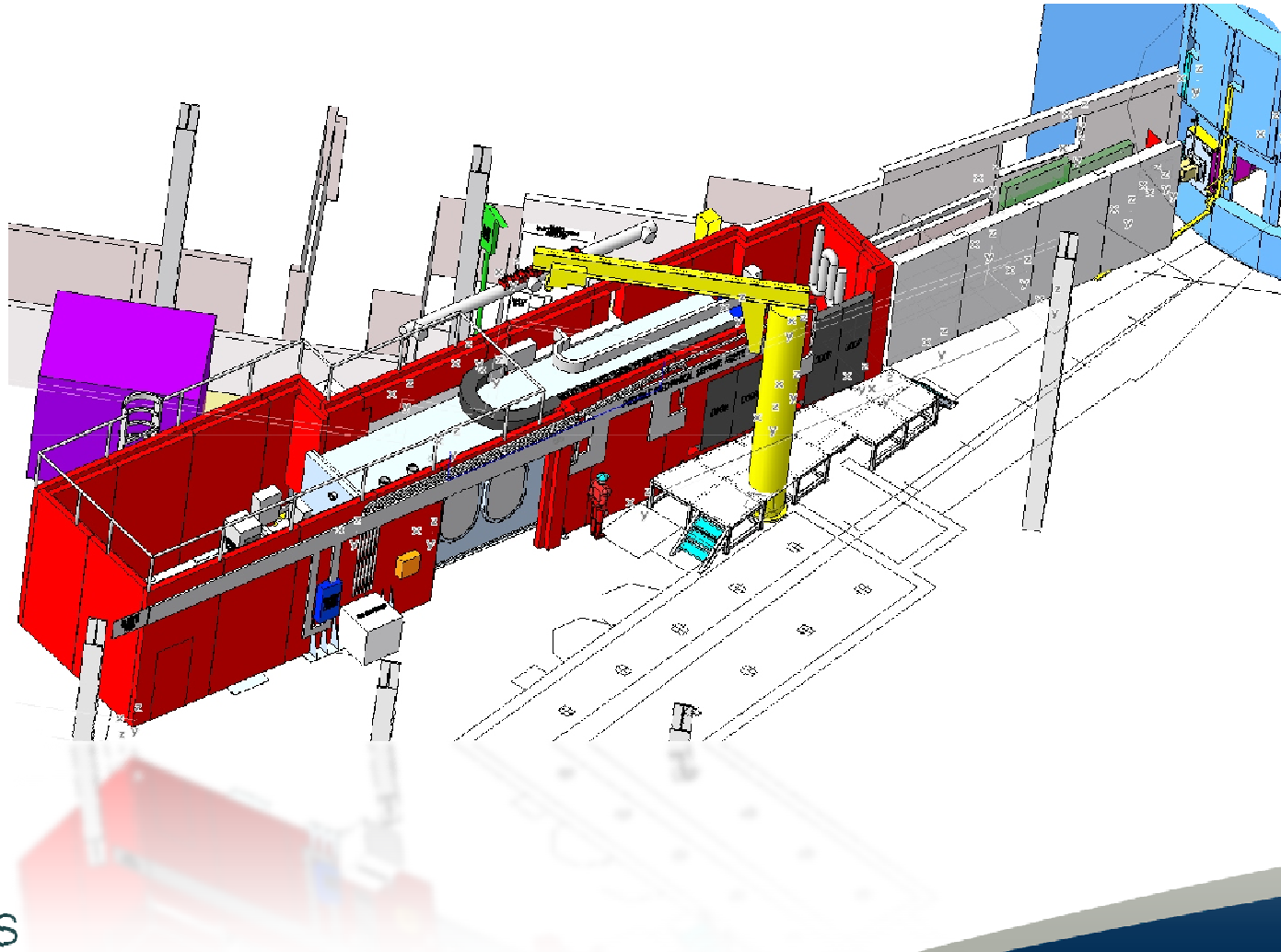
Engineering and Imaging



Science & Technology Facilities Council

ISIS

ZOOM



SANS



Science & Technology Facilities Council

ISIS

Project management

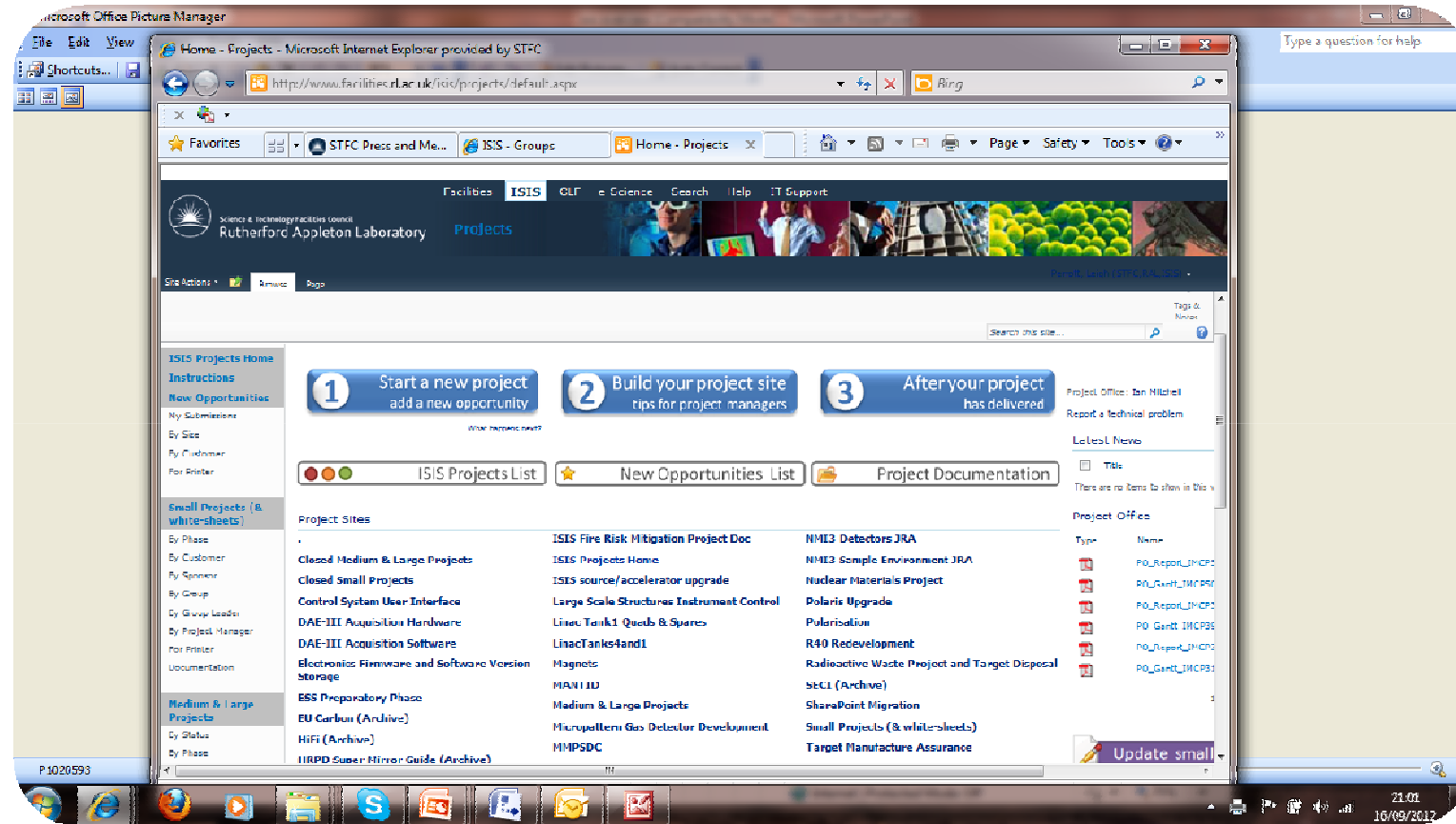
- STFC corporate PM method.
- Development PM training.
- Scalable management (small to large).
- ISIS Sharepoint register of projects.
- Continued development of PM process
- Developing a PM office.



Science & Technology Facilities Council

ISIS

Project Register



Science & Technology Facilities Council
ISIS

Small project listing

ISIS Small Projects - Overview - Microsoft Internet Explorer provided by STFC

http://www.facilities.dar.ac.uk/isis/projects/Lists/ISISSmallProject/Overview.aspx

Facilities ISIS CLF en-Science Search Help IT Support

Science & Technology Facilities Council
Rutherford Appleton Laboratory

Projects

Site Actions: groups items list

Search this site...

Traffic Light	ISIS Project	Sub Project	Division	Project Name	Project Type	Website	Folder	Edit	Project Supervisor	Co-Supervisor
Yellow	182		Experimental Operations	LET Chopper III No. 2	Medium	LET Chopper III Project Documents	LET Chopper III Project Documents		Johnson, Erik (STFC,RAL,ISIS)	Johnson, Erik (STFC,RAL,ISIS)
Green	101		Experimental Operations	Sarsol - TII Beam sample environment	Small				Heenan, Richard (STFC,RAL,ISIS)	Rogers, Sarah (STFC,RAL,ISIS)
Green	102		To be Confirmed	Modification to existing turbidimeter assembly for off-line measurements.	Small				Gerda Baker, Victoria (STFC,RAL,ISIS)	Gerda Baker, Victoria (STFC,RAL,ISIS)
Green	119		Instrumentation	DANDY ORDELA VI	Small				King, Stephen (STFC,RAL,ISIS)	King, Stephen (STFC,RAL,ISIS)
Green	123		Diffraction	Shielding front structure in DANDY VACUUM tank	Small				Heenan, Richard (STFC,RAL,ISIS)	
Green	124		Diffraction	INTER surface pump mount	Small				Taylor, Phil (STFC,RAL,ISIS)	Taylor, Phil (STFC,RAL,ISIS)
Green	133		To be Confirmed	Q-BE evacuated light path	Small				Shiota, Maximilian (STFC,RAL,ISIS)	Shiota, Maximilian (STFC,RAL,ISIS)
Green	145		Diffraction	WDM Argon system	Small		Project Documents		Upton, Laurent (STFC,RAL,ISIS)	Manuel, Pascal (STFC,RAL,ISIS)

Slide 44 of 46

21:03 15/09/2012



Science & Technology Facilities Council
ISIS

Small project listing

isis overview [Compatibility Mode] - Microsoft PowerPoint

Microsoft Internet Explorer provided by STFC

facilities.rl.ac.uk/isis/projects/Lists/ISISSmallProjects/Overview.aspx

FC Press and Media Images ISIS - Groups ISIS Small Projects - Overview

List Tools
Items List

Version History Alert Me
Manage Permissions Workflows
Edit Item Delete Item
Manage Actions

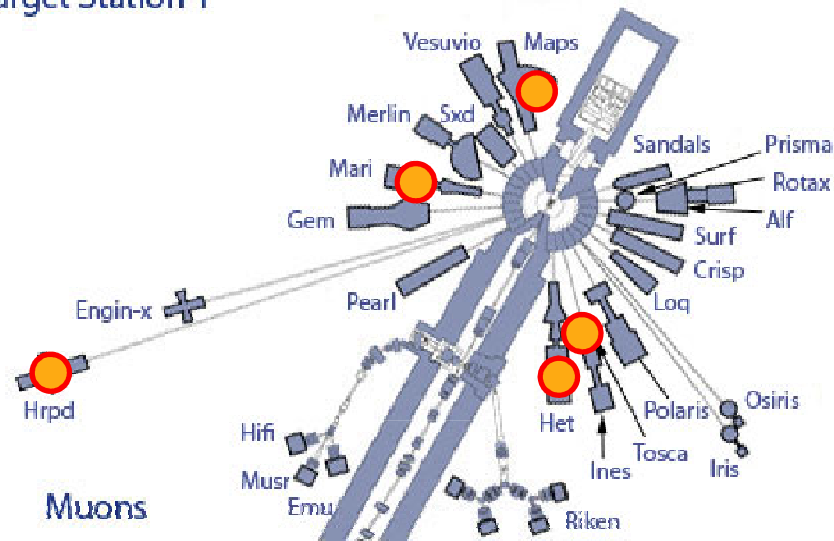
163	Traffic Light	Green
165	Project Status	Green
168	ISIS Project	182
170	SLB Project	2
174	Project Name	LET Detector Assembly MK2 Prototype
	Division	Design
	Customer	Bewley, Robert (STFC,RAL,ISIS)
	Project Sponsor	North, Matt (STFC,RAL,ISIS)
	Short Description	To study the present design & re-design the LET Detector Frame assembly to eliminate identified problems
	Project Type	Medium
	Involves	Detectors; Instrument Design
	Objective	To review the current design & publish an appraisal report, To modify the design of the Detector frame components & assembly, To manufacture, assemble & test a prototype frame assembly,
	Also Involves	
	Benefit	To Eliminate the number of detector tube failures. To reduce build time by eradicating assembly errors
	Constraints	
	Is Change Project?	No
	Estimated Cost Range	=
	Estimated Cost (£k)	

21:06
15/09/2012

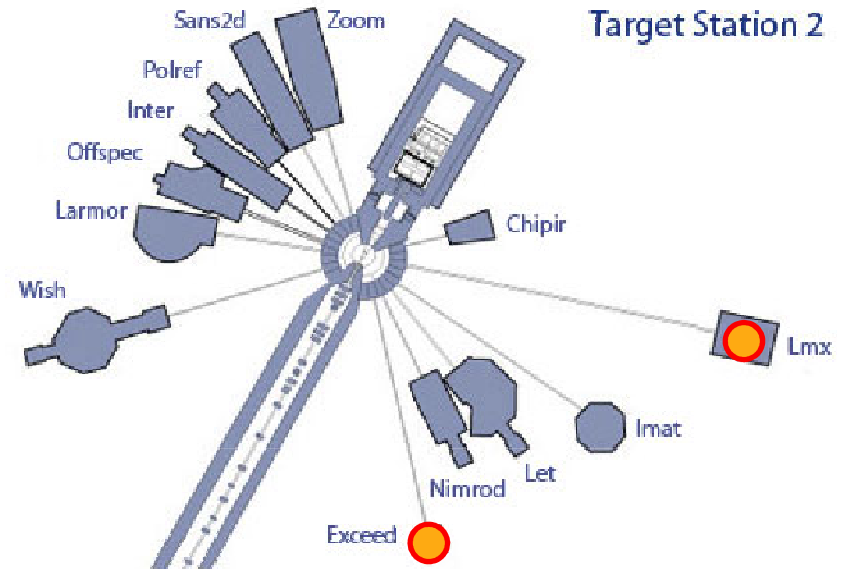


Future

Target Station 1



Target Station 2



- Vacuum disk choppers.
- Absorbing materials testing.
- Extreme environment motion systems

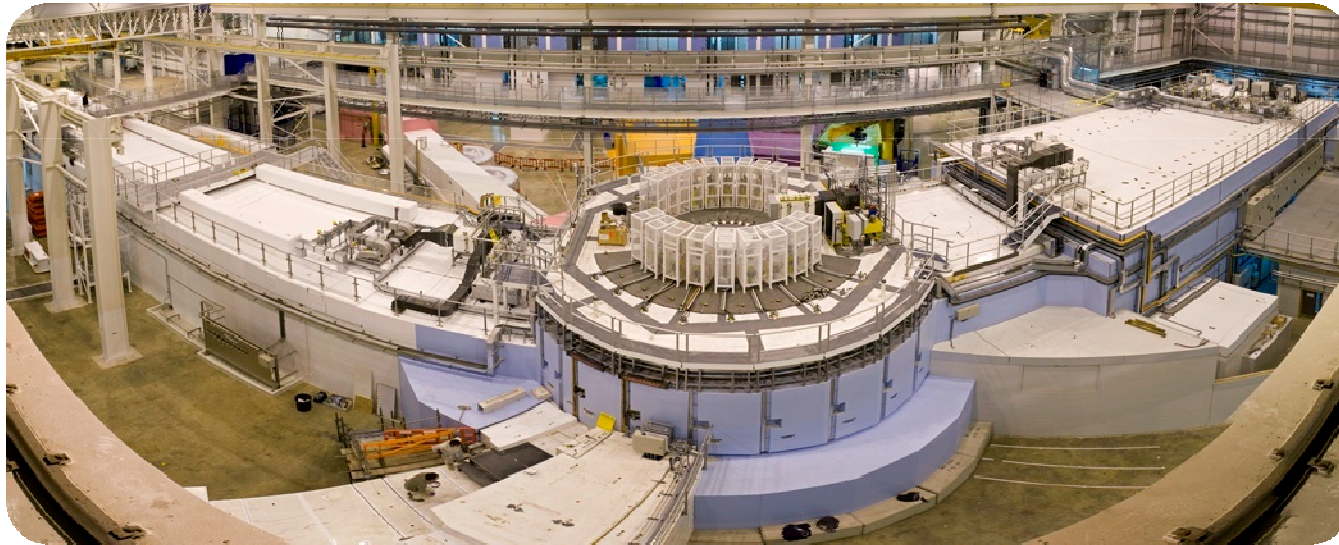


Science & Technology Facilities Council

ISIS

Conclusion

- Developing in house capabilities.
- Good future growth of the facility
- Engineering driven improvements
- Areas of expertise and areas we need to develop - collaborations



ISIS TS2 Target Station



Science & Technology Facilities Council

ISIS