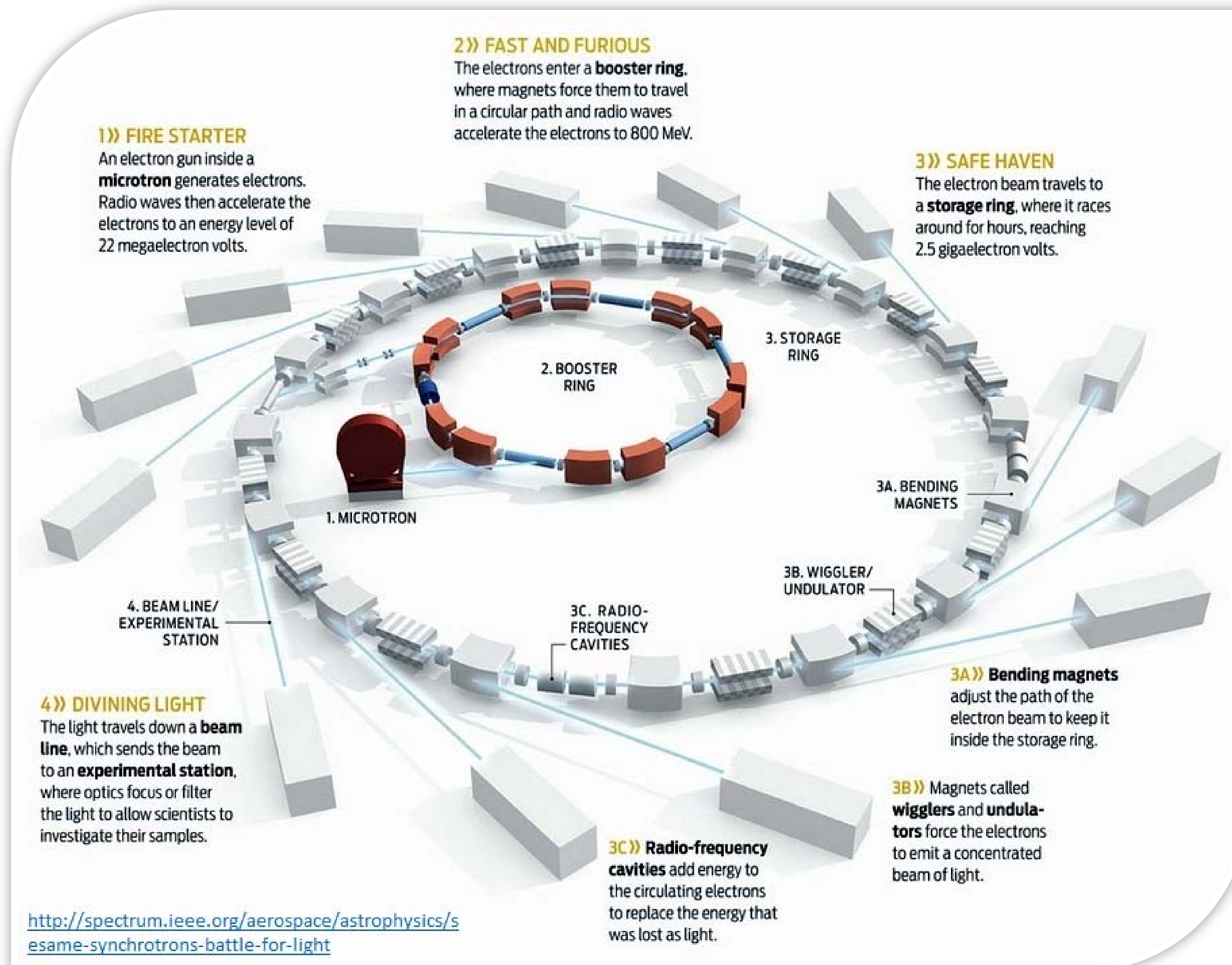


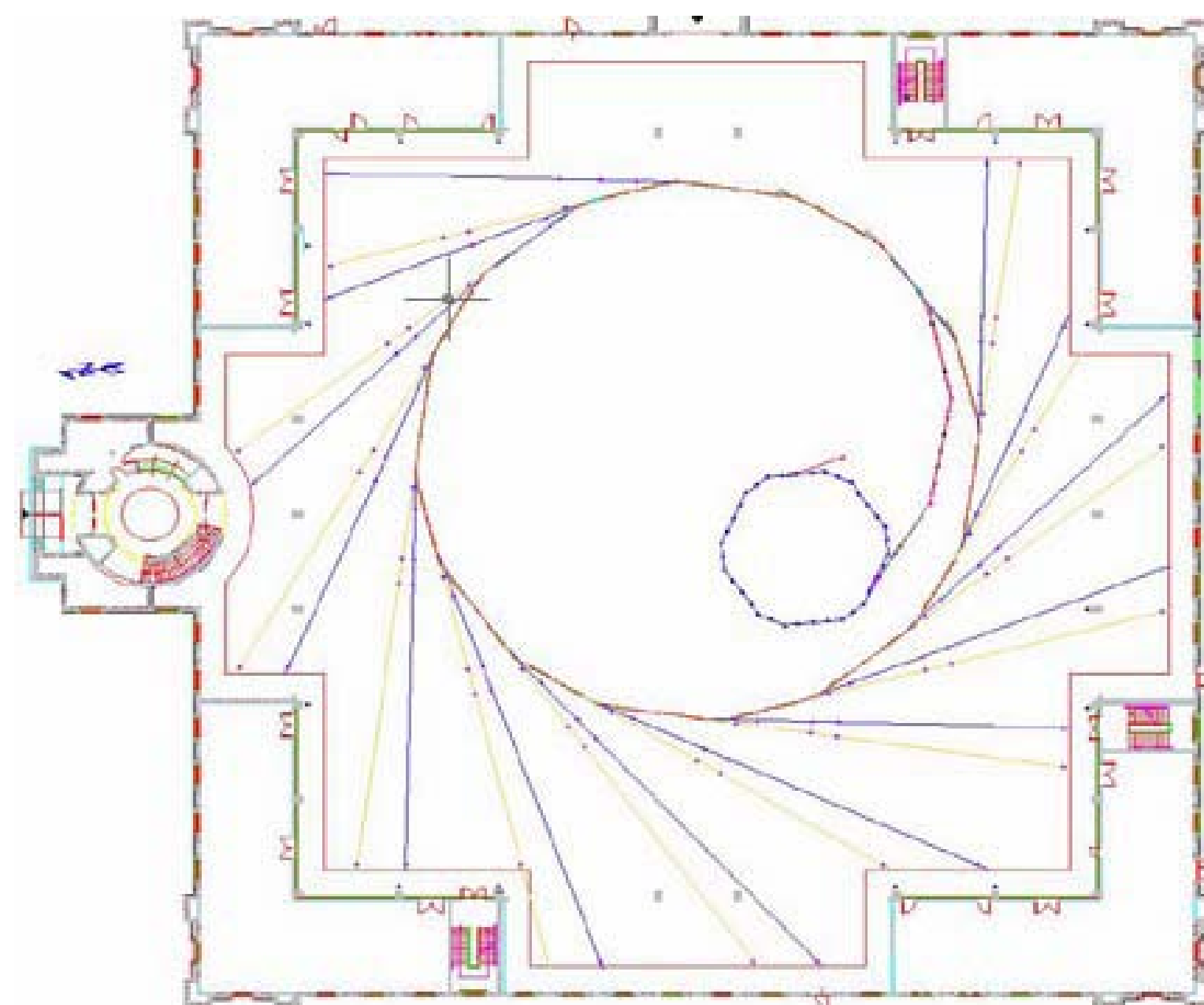
ALIGNMENT STRATEGY OF SESAME

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SESAME is the first international 3rd generation synchrotron light source in the Middle East region, under construction in Jordan. The injector of the facility consists of a 22.5MeV Microtron, 800MeV Booster from BESSY1, and a completely new 2.5GeV Storage Ring. The beam emittance is 26 nm.rad and 12 straight sections are available for Insertion Devices. Seven beamlines are envisaged in Phase I, three available at the start-up of the new ring.

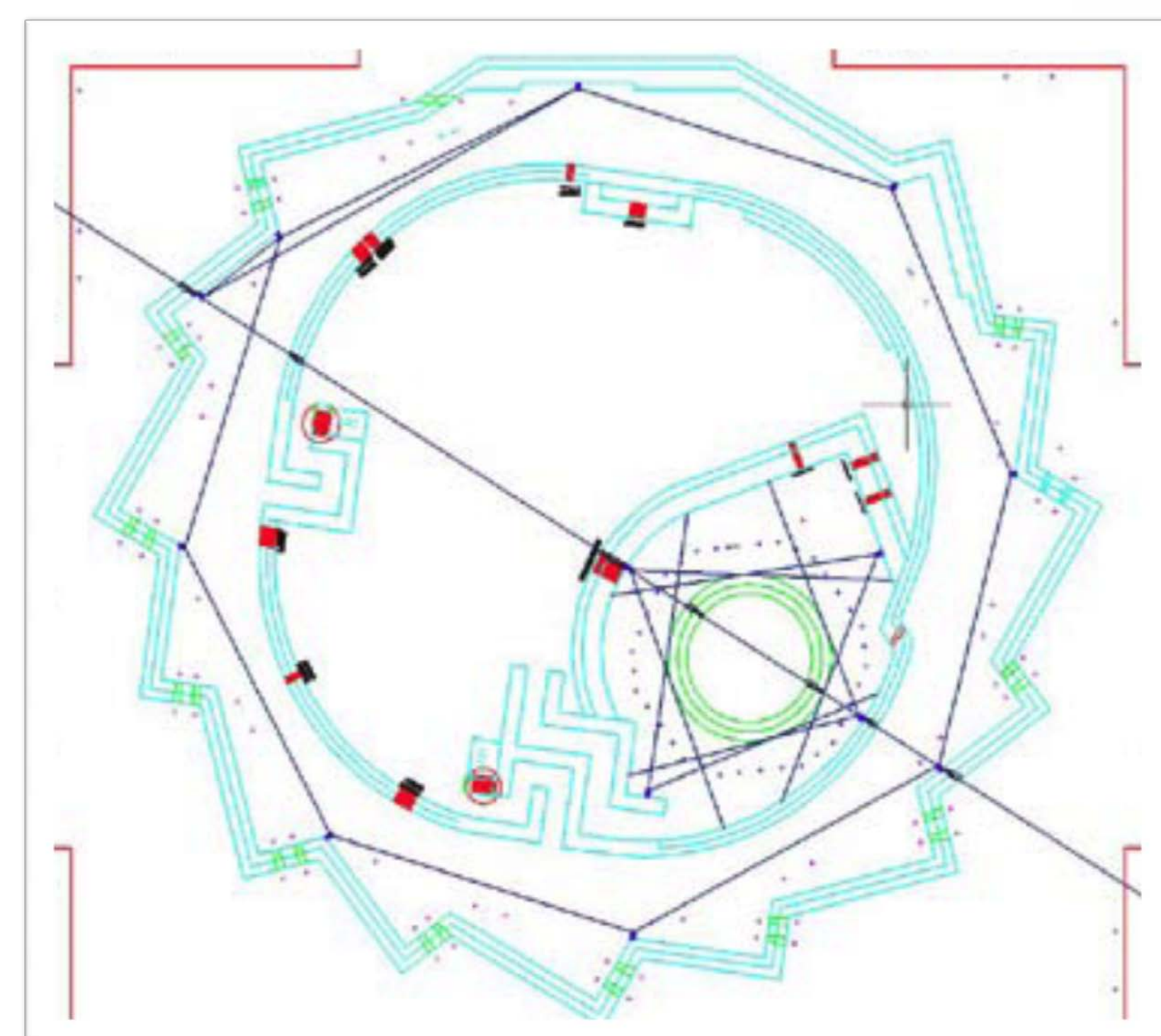
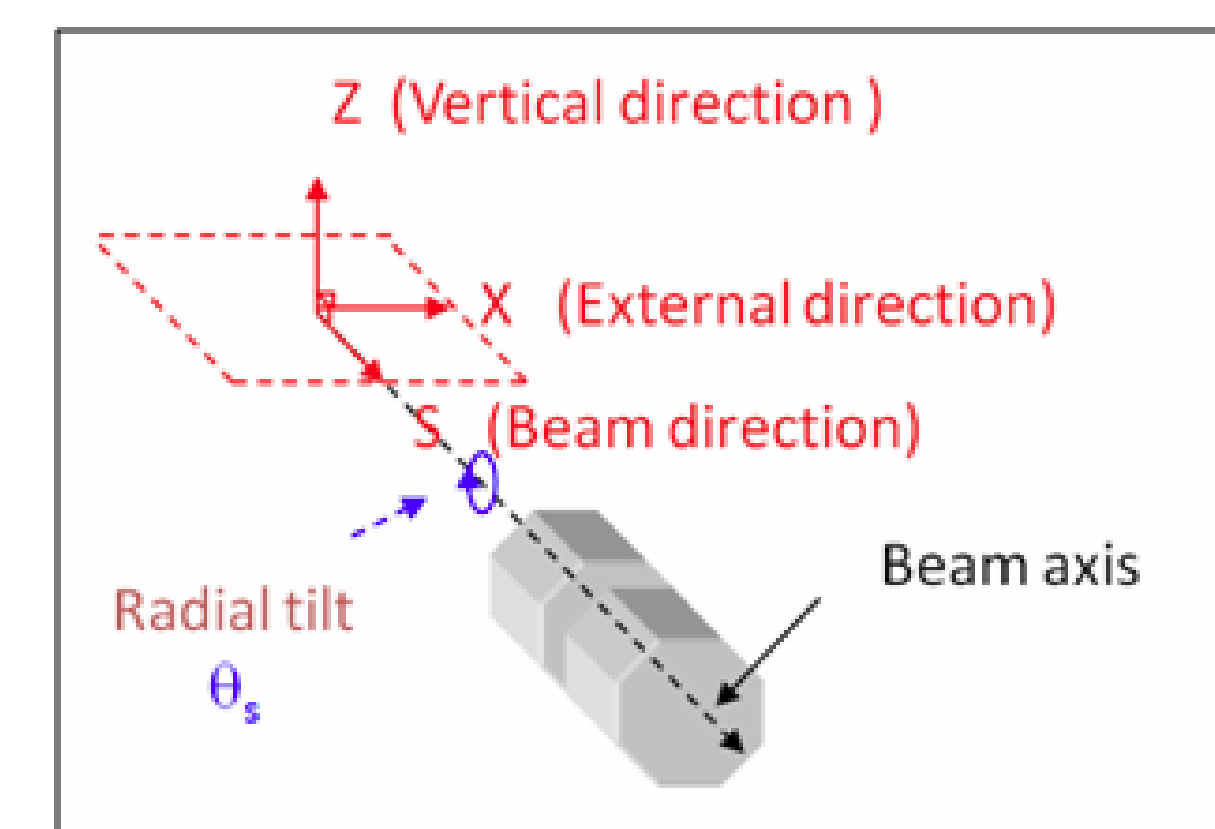


The primary geodetic network is made of 16 wall brackets installed on the concrete columns. 163 points were traced as follows: two points defining TL1, 18 points for the Booster, 10 points defining TL2, 33 points defining SR, 100 points defining Beamlines. Four wall brackets have been installed later in the BOO tunnel.



Tolerances for Booster magnets & girders in terms of positioning with respect to the nominal orbit, and the definition of reference axes

	Girder	Dipole	Quadrupole
S (mm)	±2	±0.5	±0.5
X (mm)	±2	±0.2	±0.2
Z (mm)	±2	±0.2	±0.2
θ_S (mrad)		±0.2	±0.2
θ_X (mrad)		±0.2	±0.2
θ_Z (mrad)		±1	±1



Booster Magnets are Installed and Aligned, Measurement uncertainty: ±0.05mm, 1 sigma for X and Z axis, ±0.15mm, 1 sigma for S axis and ±0.05mrad 1 sigma for Tilt. The Microtron and TL2 have been set up to their theoretical position.

SESAME's Microtron became operational in 2012, installation of its Booster was completed in 2013, and on 3rd September, 2014 the SESAME team succeeded in accelerating the electrons in the Booster to their final energy of 800 MeV. SESAME is now at a key transitional stage moving from construction activities through into machine installation and commissioning. The booster network is installed and qualified, and the storage ring network in the process. Future work activities include the installation and pre-alignment of storage ring components and the installation of phase 1 beamlines. The development of survey and metrology techniques during this next phase of the project provides exciting challenges for SESAME Survey Team.

