

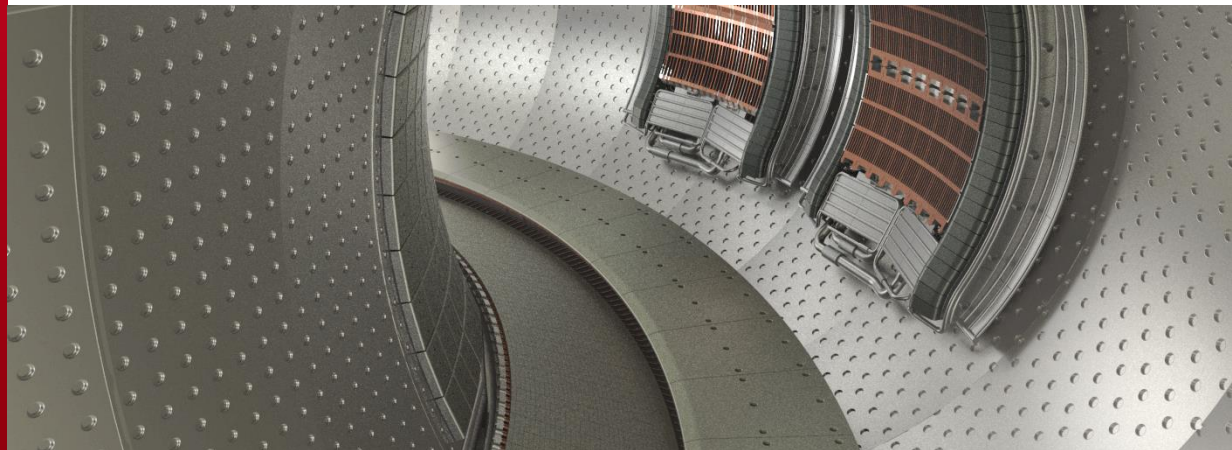
DE LA RECHERCHE À L'INDUSTRIE

cea

irfm

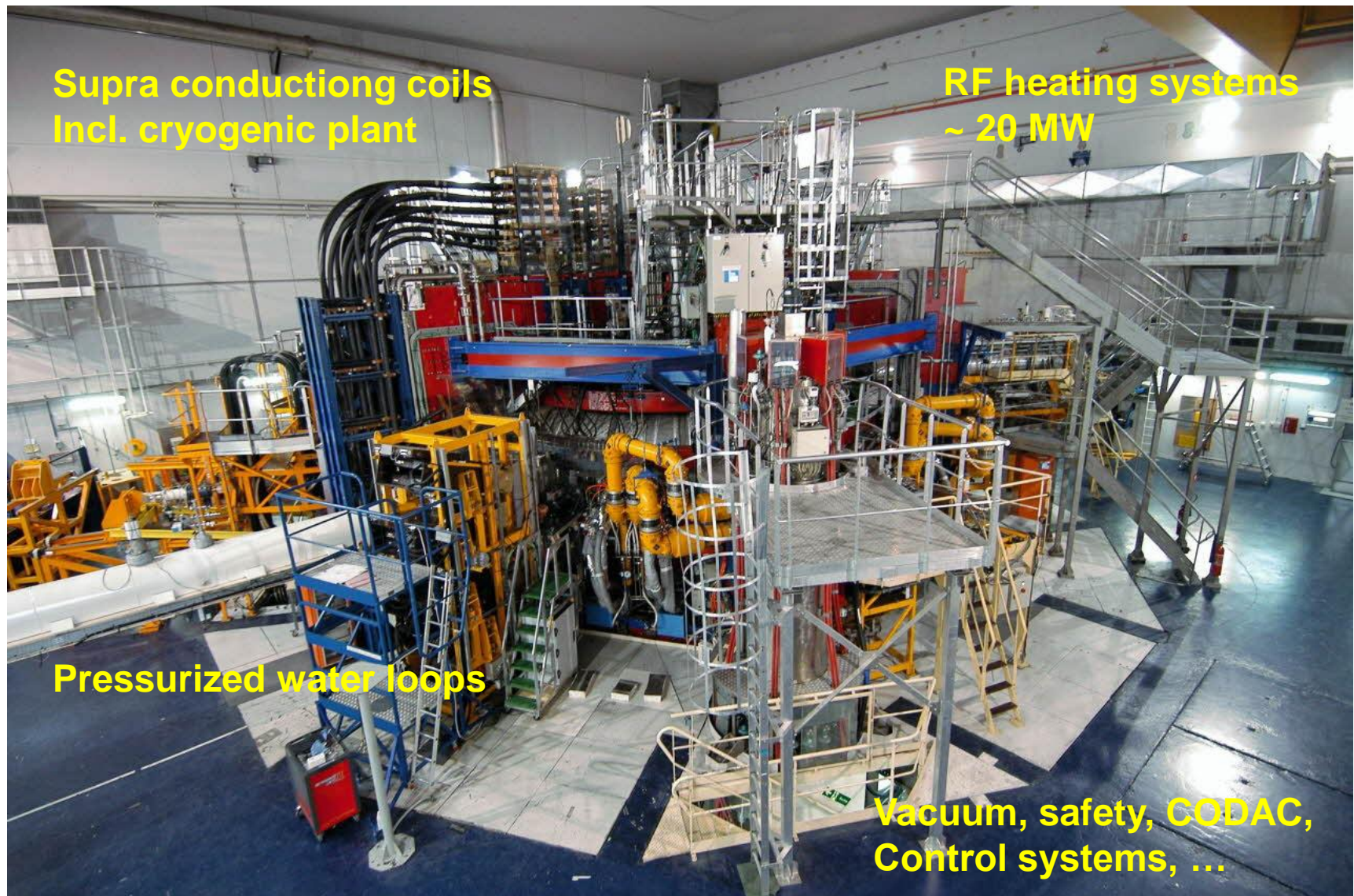
[www.cea.fr](http://www.cea.fr)

**THE WEST PROJECT:** *testing ITER divertor HHF technology in a steady state tokamak environment in close collaboration with partners and stakeholders*

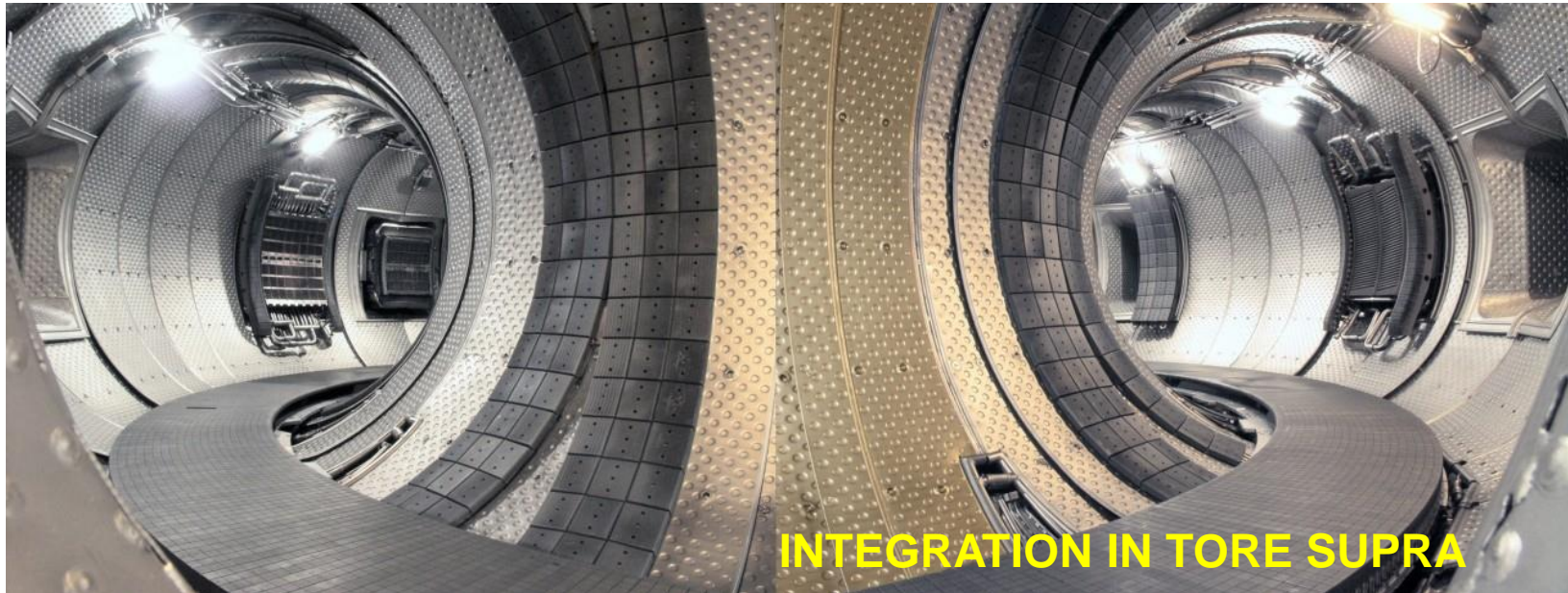


A. Grosman and the WEST team

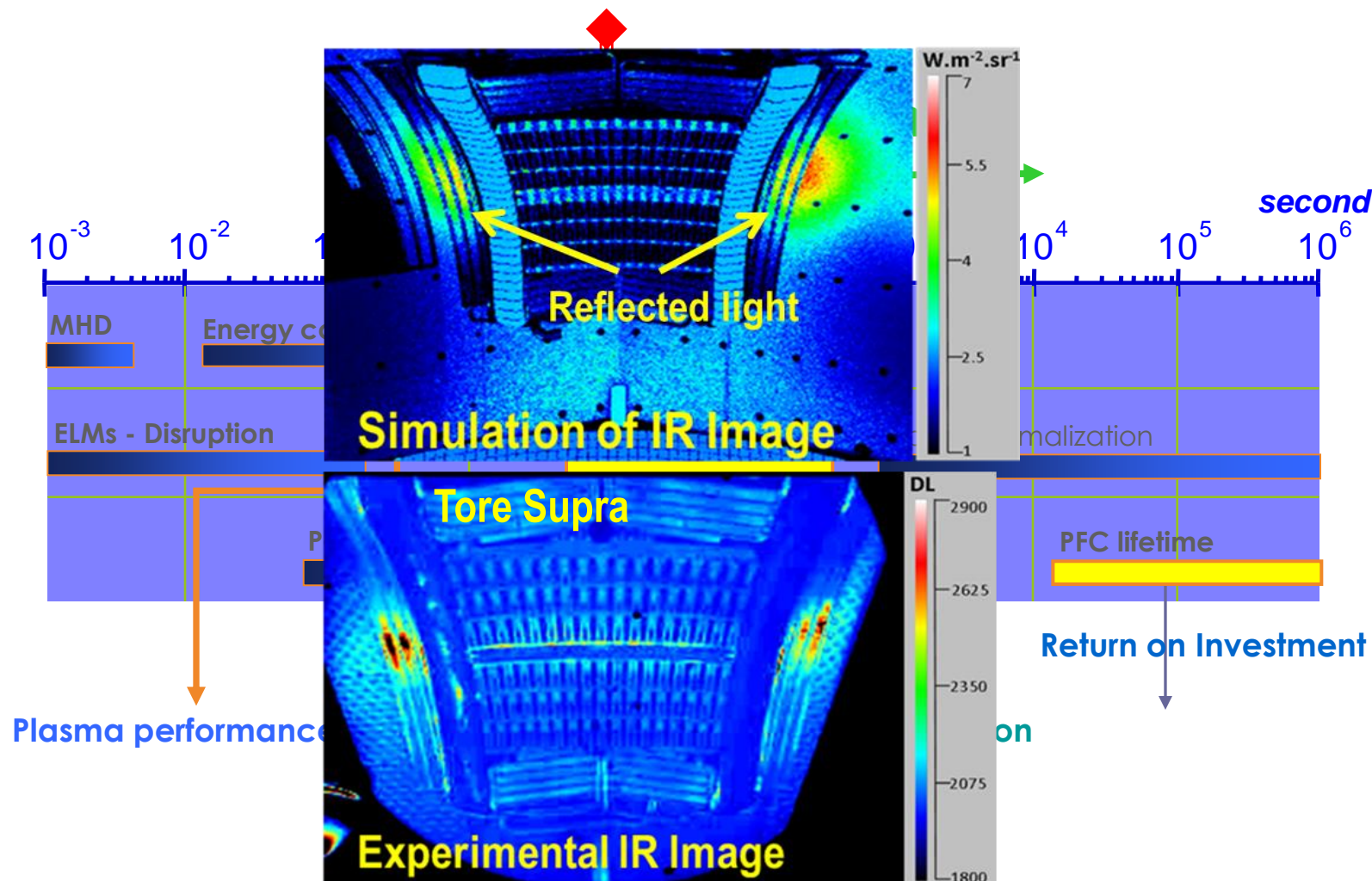
MIIFED, December 04, 2013







PLASMA  
POWER  
MATTER



IR view of Tore Supra LHCD launcher in Ohmic plasma

**Risks with ITER  
divertor procurement**

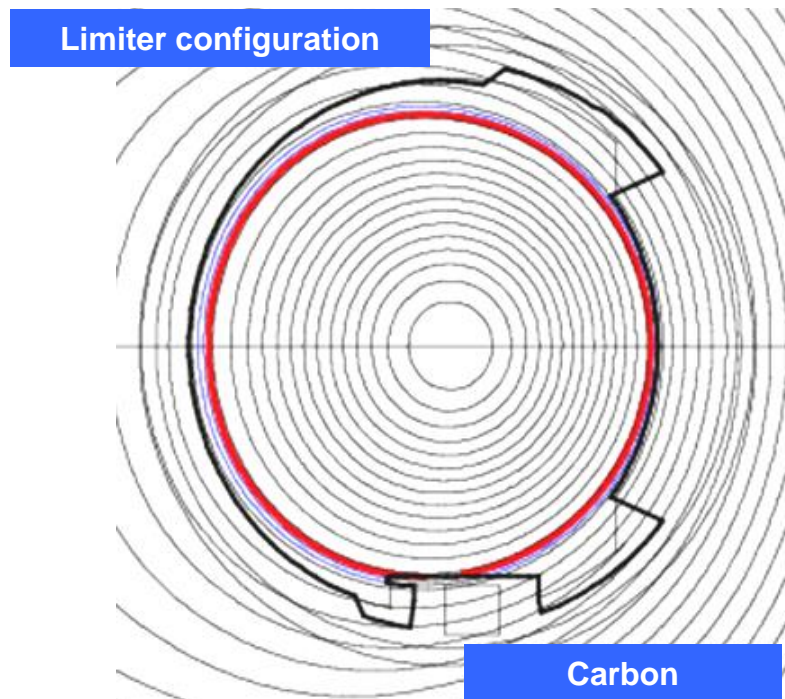
New technology facing industrialisation

**Risks with ITER  
divertor operation**

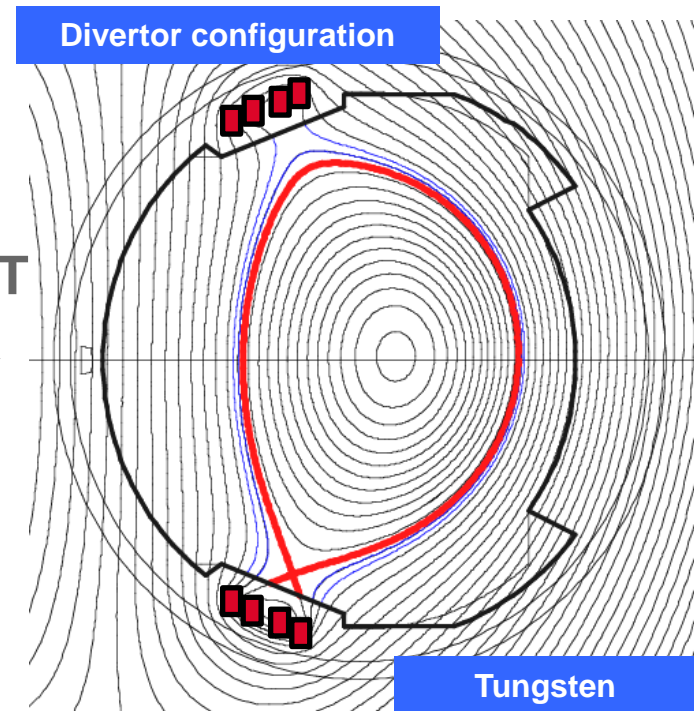
No experience with actively cooled divertor

**WEST addresses  
both of them**

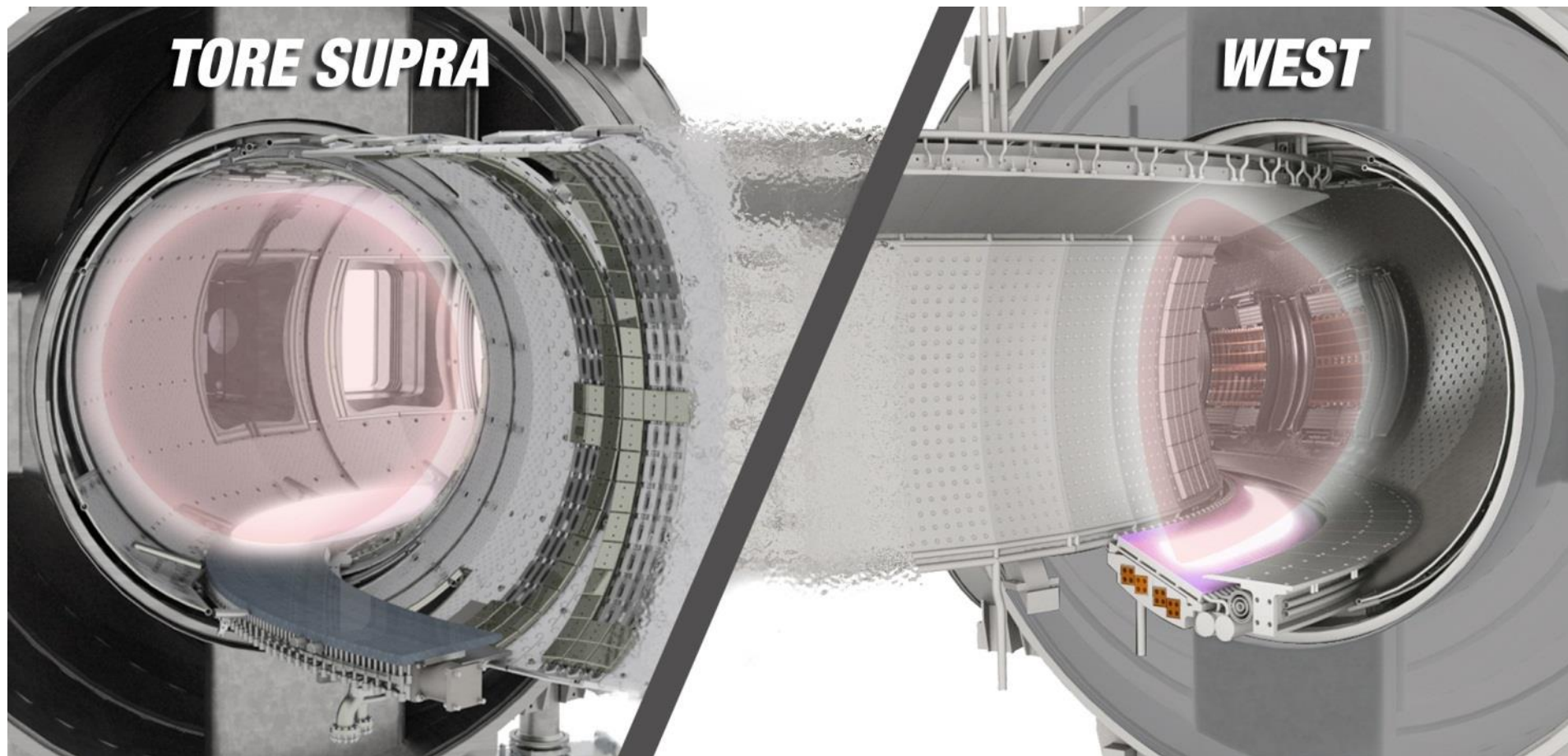




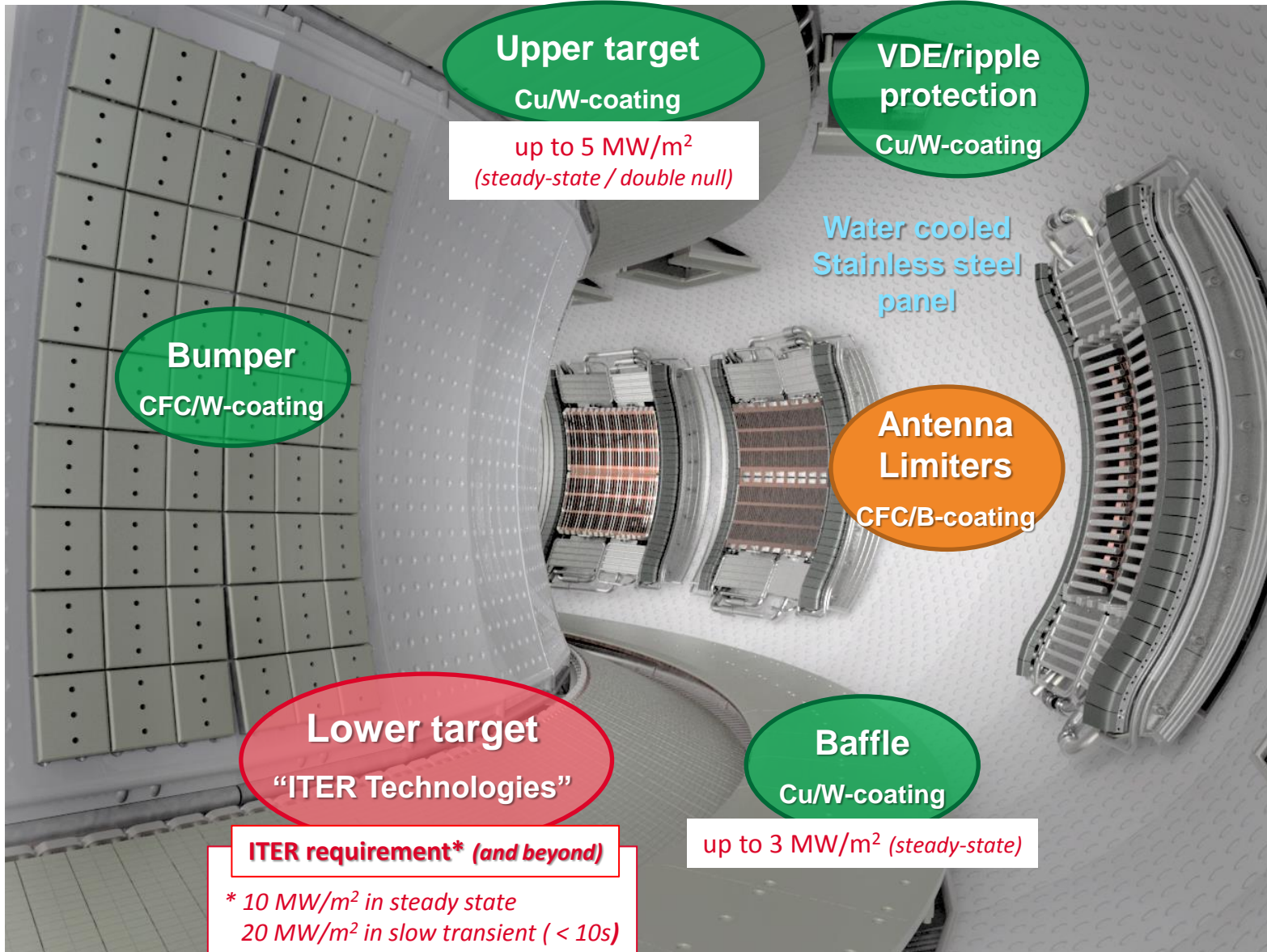
WEST  
➔



# TORE SUPRA BECOMES WEST







**Upper target**  
Cu/W-coating  
up to 5 MW/m<sup>2</sup>  
(steady-state / double null)

**VDE/ripple protection**  
Cu/W-coating

Water cooled  
Stainless steel  
panel

**Antenna Limiters**  
CFC/B-coating

**Bumper**  
CFC/W-coating

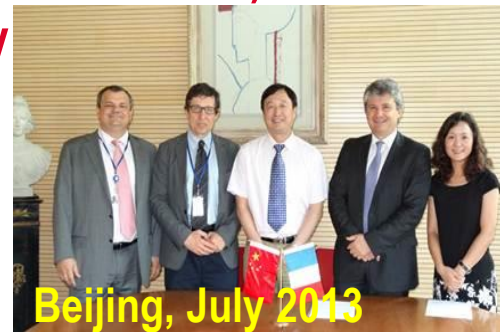
**Lower target**  
"ITER Technologies"

**Baffle**  
Cu/W-coating  
up to 3 MW/m<sup>2</sup> (steady-state)

**ITER requirement\* (and beyond)**  
\* 10 MW/m<sup>2</sup> in steady state  
20 MW/m<sup>2</sup> in slow transient (< 10s)



- ❑ June 2012 : Support from ITER O. DG (letter to CEA CEO)
- ❑ Jan 2013: China National Nuclear Corporation (associated lab.)
- ❑ July 2013:
  - Chinese Academy of Sciences (associated lab.)
  - India Department of Atomic Energy
  - IPPLM Pologne
- ❑ Sept 2013:
  - US-DOE (Letter of Intent)
- ❑ Oct 2013:
  - Fusion For Energy (Europe)
  - JAEA-JADA (Japan)
- ❑ (very soon):
  - Korea
  - EUROFUSION, IPP, FZJ



EA IRFM - W





# THANK YOU FOR YOUR ATTENTION

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DSM  
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WEST

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