

# TSVV-07 KICK-OFF MEETING SUMMARY



- **SOLPS-ITER for DEMO:**
  - Single-null with Ar seeding (so far no EIRENE) - see [F. Subba](#) and [L. Aho-Mantila @ FEC](#)
  - See also F. Militello [Preliminary analysis of alternative divertors for DEMO](#) (NME 2021)
  - See also F. Maviglia [Impact of plasma-wall interaction and exhaust on the EU-DEMO design](#) (NME 2021)
- **“Standalone” subtasks:**
  - BIT-1 assessment of “very high” density cases ( $n_e \sim 10^{22} \text{ m}^{-3}$ ), Ar, photon-plasma interaction, BIT-3
  - SPICE2 for escaping thermionic currents including SEE and BSE, influence of  $T_i$
  - SPICE3 for castellation gaps: non-uniform injection scheme and HPC upscaling
  - MD simulations: erosion of H supersaturated W, potential development W-O-(H), ACH support – in-house?
  - Implementation and verification of new physics in retention codes, RAVETIME IMAS- and HPC-enabling
  - Uncertainty Quantification and IMAS considerations for “all” codes

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- **ERO2.0 requirements:**
  - Plasma background: ion distributions (SOLPS, PIC), CX data (EIRENE ← TSVV-05)
  - So far full-W ITER (ITER scale geometry) → is it reasonable to upscale to DEMO or wait for real DEMO case?
- **Transient PWI requirements:**
  - Heat loads + plasma parameters near PFC for thermionic emission
  - Start with scoping dust transport studies in ITER-like ramp-up/down; assumptions on dust sizes and velocities
  - MEMOS-U from year 3 (code upgrade); active cooling in DEMO



## POINTS RAISED / ACTIONS:

- Plasma solution – **a working meeting to be planned (Thrust 2, WP DES, WP ADC)**
  - Plasma solution needs for ERO2.0 and MIGRAINE to be detailed (kinetic neutrals, wide grid, ...)
- Roughness studies with various approaches – **a working meeting to be planned (FZJ, IPP, VTT)**
  - SPICE3 for electric field structure on the scale of surface roughness, ERO2.0 vs SDTrimSP-3D vs MD
- Long term strategy for retention codes – **a working meeting to be planned (FZJ, IPP, CEA/USPN)**
  - Soret effect – easy to implement, hard to validate (no data on Soret coefficient, poor perspectives)
  - D/T/He at interfaces – interaction with WP PWIE; Kirkendall effect – long term interface degradation?
- Transient plasma profiles – **a working meeting to be planned (DCT, WP DES)**
- Wrong budget for Marconi (on the side of allocation committee) – **clarified, full budget will be allocated asap**
- Prioritization of ACH support requested – **document uploaded** to <https://indico.euro-fusion.org/category/280/>
- Can IMAS integration be delegated to ACH? – **proactive contact to ACH** with our requests (also HPC-related)
  - **Input and output data by codes** to be listed and options for reduction to reasonable sets to be discussed