**FSD science coordination meeting in preparation for the 2022**

**Work Package Advanced Computing**

**MINUTES**

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| **Date:** | Friday 10 Sep 2021 |
| **Time:** | 09:30 → 12:15 CEST |
| **Venue:** | By videoconference (Zoom):  Meeting ID: 861 2027 9125  Passcode: 625889 |
| **Files (IDM & INDICO):** | Meeting INDICO page: <https://indico.euro-fusion.org/event/1309/> |
| **Version** | 1.0 |

**Invited Participants**

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| **Chairs** | Volker Naulin  Tony Donne |
| **FSD COs** | Denis Kalupin  Sara Moradi  David Douai  Joao Figueiredo  Mattia Siccinio |
| **WP Leadership (PLs/TFLs/E-Tasc SB)** | Arturo Alonso  Sebastijan Brezinsek  Giuseppe Calabro  Ivan Calvo  Alexandra De Schepper  Alessandra Di Bastiano  Andreas Dinklage  Gloria Falchetto  Antti Hakola  Frank Jenko  Emmanuel Joffrin  Benoit Labit  Xavier Litaudon  Carolin Petersen  Carlo Sozzi  Emmanuelle Tsitrone  Nicola Vianello  Sven Wiesen  Marco Wischmeier  Hartmut Zohm |
| **ITER IO** | Simon Pinches  Tim Luce  Alberto Loarte  Richard Pitts |

**Minutes**

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|  | **Welcome to the SC meeting** |
| 1 | V. Naulin opened the meeting noticing different agenda layout comparing to other WPs. |
|  | **Progress summary and status for 2021 and goals for 2022** |
| 2 | The E-TASC Scientific Board Co-Chair, Frank Jenko, has presented the overview of TSVV and ACH organisation and activities for 2021-2022. Following points were proposed for the discussions by the meeting attendees:  •How did the first round of Thrust meetings go?  •Best practices: What does (or does not) work well so far?  •How to best interact across Thrusts?  •How to best link tokamak and stellarator efforts?  •Any other observations or suggestions?    ***Discussions:***  **Q:** E. Joffrin pointed out that the V&V of TSVV codes would require close interaction at the working level between PIs (or Code Coordinators) and SCs. Such interactions must be must be very technical oriented and can not happen at the Thrust level.  **R:** V.Naulin asked how the interactios are done now?  **R:** E. Joffrin replied that at the moment TFLs set separate meetings of different TSVVs with relevant experiments, the outcome is reported to the Thrust.  **Q:** S.Brezinsek pointed out that the composition of Thrusts must be updated to include additional WPs (for instance W7X into Thrust#2). Also people from the DEMO central team shall be closer integrated into Thrust activities.  **R:** F. Jenko replied that there are already interactions at the SB level (a few names were proposed by H.Zohm). It is also possible to add them to the particular Thrust. |
|  | **Thrust 1: Pedestal & SOL Turbulence** |
| 3 | N Vianello presented the summary of the Thrust #1 activities. Identified actions by the Thrust#1:  • Priorities of the modelling/interpretative requests (WPTE >>TSVVs). This will  happen after WPTE Review and Program meetings  • Feedback on possible stepladder approach: which issue can be firstly addressed  (TSVVs>>WPTE).  • Theory-driven experimental proposals for validation. Thrust will foster synergies  with present SCs to put forward these proposals in future WPTE calls.  ***Discussions:***  **Q:** F.Jenko mentioned that the list of WPTE topics is very long and TSVV can not cover all of them.  **R:** N.Vianello replied that prioritization will be done.  **Q:** S.Brezinsek noticed that there are too many detailed V&V tasks discussed at the moment under Thrust#1, whereas it might be not appropriate for the starting phase of E-TASC programme. Validation discussions should be more suitable at the end of TSVV. Question if PIs are not overloaded by such detailed request.  **R:** N.Vianello replied that V&V initiative is coming from TSVV PIs, when projects would like to follow progressive validation exercise through all the development time. |
|  | **Thrust 2: Edge Physics & PWI** |
| 4 | S. Brezinsek presented the summary of Thrust#2 activities. He reported very productive 1st progress meeting, noticing that: FTD persons with common interest in PWI & E needs to be invited for next thrust meetings.  ***Discussions:***  **Q:** S. Wiesen noticed that it is important to keep all interested parties involved (like DCT), but this should not overload Thrusts in terms of the number of attendees.  **R:** In addition, S. Brezinsek brought attention to a few points: TSVV-06 was receiving very moderate ACH support, may be SB can check the situation with the PI and allocate more ACH resources if needed; TSVV-07 requires DEMO plasma background – therefore input from DCT is essential.  **R:** S. Wiesen noticed that it is not easy to bring together all people involved in EMC3.  **R:** R.Pitts told that IO works a lot on EMC3 benchmarking and will be happy to collaborate to EF on this activity. |
|  | **Thrust 3: MHD & REs** |
| 5 | C. Socci presented the summary of Thrust#3 activities. Also a number of more general issues were brought to the attention of the meeting (alignment of TSVV and WP topics, future of the ETS, Thrust WIKI, mobility for TSVVs)  ***Discussions:***  **R:** V.Naulin as immediate response to some of issues: travel funding sufficient for at least one TSVV meeting per year will be made available to projects; WIKIs can be established.  **R:** F. Jenko told that the list of issues in Carlo’s presentation is very useful and will be discussed by the following SB. By any grouping of TSVVs there will be pro and contra, present structure seems to be quite optimized.  **R:** E. Joffrin: there is a work on reduced models included in TSVV, this requires very close connection to the experiment;  The message on ETS is not clear. The future of the ETS and modules developed for it must be clarified to the community. |
|  | **Thrust 4: Stellarators** |
| 6 | I. Calvo presented the status of Thust 4 activities.  ***Discussions:***  **R:** V.Naulin made a remark that the travel budget 2021 will stay as it is now and for 2022 PMU will try to allocate more money (as it was discussed earlier at this meeting)  **R:** F. Jenko made the remark regarding the interaction between tokamak and Stellarator communities: the invitation to the Thrust meeting must be more specific, targeting people involved in the discussed topic. |
|  | **Thrust 5: Whole-Device Modeling** |
| 7 | X. Litaudon has presented the overview of the Thrust 5. First Thrust meeting is expected on 7th of October 2021.  ***Discussions:***  **R:** D.Kalupin Software standards will be presented to the SB on 29.09.2021 |
|  | **ITER physics priorities relevant to the WP** |
| 8 | S. Pinches presented ITER priorities linked with WPAC. Besides addressing important physics and R&D issues, collaboration on following tools has a high priority: IMAS, HFPS, PDS, data processing and interpretation (synthetic diagnostics), reduced models.  ***Discussions:***  **Q:** E. Joffrin: Link between PDS and HFPS?  **R:** Both tools shall inter-change the modules, particularly the development of validated reduced models is important  **R:** X. Litaudon: Analysis tools are very important, but unfortunately due to lack of resources can not be covered under WPPrIO.  Real time control tools is also a part of TSVV-11 activities.  **R:** F. Jenko mentioned that some of reduced models can be developed within ACH based on the DB produced by more sophisticated tools  **Q:** E. Joffrin: we must discuss and understand which reduced models have a high priority, following ITER operation in the start phase and DEMO scenario simulations requirements  **R:** The standard will be defined by the critical mass of users, particularly IMAS is going be promoted under E-TASC |
|  | **Discussions of 2022 AWP (feedback to E-TASC SB)** |
| 9 | Closing remarks |