

FSD Theory Project Board meeting 2 21 OCTOBER 2021

MINUTES

Date:	21 OCTOBER 2021
Time:	9:00 – 11:00 CEST
Venue:	By videoconference (Zoom): Meeting ID: 838 7745 4031 Passcode: 726225
Files (IDM & INDICO):	Meeting Page: https://indico.euro-fusion.org/event/1192/ PEP WPAC: http://idm.euro-fusion.org/?uid=2NKG7 PEP WPENR: http://idm.euro-fusion.org/?uid=2PBJ7R Materials from 3-rd E-TASC SB (TSVV/ACH project monitoring) (29.09.2021): https://indico.euro-fusion.org/event/1208/ Materials from THRUST monitoring meeting (10.09.2021): https://indico.euro-fusion.org/event/1309/
Version	1.0

Invited Participants (Present in this PB Meeting)

Chair	Tony Donné (EUROfusion Programme Manager)
CEA	Frédéric Imbeaux
IPPLM	Michal Poradzinski
IST	Carlos Silva
EPFL	Jonathan Graves
MPG	Eric Sonnendrücker
DIFFER	M.J. Pueschel
CIEMAT	Edilberto Sánchez
IPP.CR	Eva Macusova
VR	Dmitriy Yadkin
Programme Management Unit	Volker Naulin (FSD Head / E-TASC SB Chair) Emilia Genangeli (Admin. Head) Fabio Vinagre (PMO Head) Botond Meszaros (PMO)



	Denis Kalupin (FSD CO Theory and Modelling) David Douai (FSD CO PWI&E) Joao Figueiredo (FSD CO Enhancements) Richard Kamendje (IC)
E-TASC SB	Frank Jenko
ITER IO	Simon Pinches

Minutes

INTRODUCTION																									
1	<p>Welcome to the Theory Project Board meeting</p> <p>T. Donn� introduces the agenda. There were no objections to the agenda.</p>																								
2	<p>Review of open actions</p> <p>T. Donn� presented the status of actions allocated during the 1st PB-Theory:</p> <p>List of Actions from the 1st PB-Theory</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Resp. Person(s)</th> <th>Description</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>Denis Kalupin, Frank Jenko</td> <td>Action on WPAC to establish and send Instructions to the TSVV PIs on data and code management procedures including location of hosting</td> <td> <p>IN PROGRESS</p> <p><i>(installation of DevOps and virtual nodes have been endorsed by the HPC PB, implementation is in progress. Criteria for EUROfusion standard software were distributed and discussed with PIs at the E-TASC SB)</i></p> </td> </tr> <tr> <td>A2</td> <td>Emilia Genangeli</td> <td>PMU Admin shall investigate the possibility to increase the travel funds if possible and propose it to the next PB as change request.</td> <td> <p>NOT STARTED</p> <p><i>(waits for signature of EUROfusion Grant Agreement and the final version of the budget)</i></p> </td> </tr> <tr> <td>A3</td> <td>Denis Kalupin</td> <td>PMU shall interact with the TSVV and ACH PIs to allocate the present mission budget at least for 2021</td> <td> <p>DONE</p> <p><i>(A few planned missions were reported by PIs, IMS mission application shall be submitted)</i></p> </td> </tr> <tr> <td>A4</td> <td>Denis Kalupin</td> <td>Potential absence of IMASified data must be included as a risk in WPAC PEP</td> <td> <p>DONE</p> <p><i>(PMP is updated)</i></p> </td> </tr> <tr> <td>A5</td> <td>Denis Kalupin,</td> <td>PMU & E-TASC SB shall propose the collaborative structure that would</td> <td> <p>IN PROGRESS</p> </td> </tr> </tbody> </table>	No.	Resp. Person(s)	Description	Status	A1	Denis Kalupin, Frank Jenko	Action on WPAC to establish and send Instructions to the TSVV PIs on data and code management procedures including location of hosting	<p>IN PROGRESS</p> <p><i>(installation of DevOps and virtual nodes have been endorsed by the HPC PB, implementation is in progress. Criteria for EUROfusion standard software were distributed and discussed with PIs at the E-TASC SB)</i></p>	A2	Emilia Genangeli	PMU Admin shall investigate the possibility to increase the travel funds if possible and propose it to the next PB as change request.	<p>NOT STARTED</p> <p><i>(waits for signature of EUROfusion Grant Agreement and the final version of the budget)</i></p>	A3	Denis Kalupin	PMU shall interact with the TSVV and ACH PIs to allocate the present mission budget at least for 2021	<p>DONE</p> <p><i>(A few planned missions were reported by PIs, IMS mission application shall be submitted)</i></p>	A4	Denis Kalupin	Potential absence of IMASified data must be included as a risk in WPAC PEP	<p>DONE</p> <p><i>(PMP is updated)</i></p>	A5	Denis Kalupin,	PMU & E-TASC SB shall propose the collaborative structure that would	<p>IN PROGRESS</p>
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	Frank Jenko	involve WPTE and ACH to insure that by 2024 experimental data required by TSVVs are available for all EUROfusion machines. (data mapping and data access tolls)	<i>(partially covered by established Thrust structure, additional discussions are needed within DataBase group)</i>
A6	Denis Kalupin	PMU shall approach TSVV PIs to check if corrections to the work programme 2021-2022 are needed, the summary shall be presented to the following PB as change request	DONE <i>(PIs were approached via email and during the last E-TASC SB: no changes were reported)</i>
A7	Denis Kalupin	Interactions between the E-TASC SB and the Theory PB shall be clearly identified in updated PEP.	DONE <i>(PMP is updated)</i>

Discussions:

Q: The PB asked for additional clarifications on **A5**, namely if other (than WPAC) work packages shall be involved in provision of IMASified data and if there are resources allocated to such activities?

R: Due to the budget cuts it is difficult to allocate additional resources to cover such work, nonetheless PMU will promote this activities through Thrusts, Data Base group and WPs.

Actions A3, A4, A6 and A7 were closed.

Work Package Advanced Computing

3 WPAC Project Change Requests (PCRs)

Two Change Requests have been reported to the board.

CR1: Approval of change request to ACH-VTT programme 2022. (E-TASC SB)

Taking in account the coverage of EIRENE support in 2022 by ACH-MPG, it is proposed:

Reduce the EIRENE support trough ACH-VTT in 2022 (by 6 PMs)

Redistribute the freed 6pm over the following tasks:

- Increase support to various codes (TSVV-01)
- Increase support to DREAM (TSVV-09)
- Provide support to TSVV-07 codes (exact tasks are currently discussed with the PI)

This revision was **recommended by the E-TASC SB at its meeting on 29.Sept.2021.**

CR2: Minor changes to PMP. (E.Sanches/CIEMAT)

- Page 36/53: minor change: "with FFS" --> "with Full Flux Surface (FFS)"
- Page 49/53: minor change: The calculations performed for (D1.2) will be extender ... --> Previous flux tube calculations will be extended ...
- Page 49/53: minor change: "Performance of nonlinear simulations with GENE-3D and EUTERPE with adiabatic electrons, nonlinear simulations with kinetic electrons will follow after that" -> "Performance of nonlinear simulations with GENE-3D and EUTERPE with adiabatic electrons, nonlinear simulations with kinetic electrons will follow after that"



The Project Board approved CR1.

The board took note on CR2 (as it is a minor editorial change to the PMP). FSD CO shall update the document accordingly.

WPAC Annual Work Plan - 2022

Frank Jenko (E-TASC SB Co-Chair) presented:

- the outcome from WPAC planning meeting (priority topics from Thrusts);
- the overview of TSVV and ACH activities (key points and issues reported at the last E-TASC SB); and
- the definition of criteria for the EUROfusion standard software and the code monitoring table.

Discussions:

Q: How the presented monitoring approach will influence the distribution of ACH resources?

R: The monitoring table shall provide the overview, which will help all involved parties to understand “where we are” with development of TSVV codes. It will help to correct the ACH programme to support areas in the table, which are currently covered in red. The distribution of resources is the task of the E-TASC SB which will follow TSVV requests, taking in account the original numbers indicated in TSVV proposals.

R: E-TASC tries to avoid a “throw over the fence” approach in code development, TSVV and ACH shall have a one team approach, when the ACH coordinator is also considered to be the code owner. It was always the goal of the E-TASC to develop professional software for community use.

C: The declared goal of EUROfusion standard software might be difficult to achieve, particularly with the shared responsibility for the code development between TSVV and ACH. The knowledge of some specific topics, like IMAS can be limited.

R: A training on IMAS was already organized by ACH-IPPLM (<https://indico.euro-fusion.org/event/1246/>, <https://indico.euro-fusion.org/event/1247/>), which made the introduction to the topic to all people who could attend it. For others, the training is recorded and materials are available at the meeting page.

C: Some of projects indicated IMASification as not applicable.

R: The summary table represents just a first collection of information from TSVV PIs. The E-TASC SB has the view that IMAS is the default standard and it will be required for all codes delivered in TSVVs.

Q: The composition of Thrusts is defined in a certain way, whereas there can be other synergies not covered by the present layout

R: Thrusts should not be setting up the boundaries for the knowledge exchange, all TSVVs reach out to any WP or attend any Thrust meeting. The current Thrust layout represents some logical



grouping, that seems to be reasonable and so far it works well. Thrust#4 is a bit more isolated, but the E-TASC SB promotes cross-involvement between stellarator and tokamak communities.

Q: Some of TSVV PIs report that allocated ACH resources are not sufficient, in particular to cover some code optimization tasks. Is there a mechanism to guarantee the fairness of ACH resource distribution?

R: Indeed there is some shortage of ACH resources in 2021-2022 due to startup phase. The distribution is always assessed and approved by the E-TASC SB following the TSVV requests and available ACH resources. During 2023-2025, ACH resources allocation will compensate for the initial unbalance in the distribution between TSVVs and a fair distribution will thus be obtained on the overall period 2021-2025.

Q: Are highlights indicated by Thrusts going to have impact on the TSVV programme?

R: Yes, E-TASC SB will follow up on them.

Status of HPC and Gateway (nothing to report to the current meeting)

C: There are issues reported by TSVV and ACH participants to establish an account on the ITER computing cluster

A8: FSD CO together with ITER RO to investigate the situation with establishing new accounts and propose a solution

C: Renewal of the Gateway User Board (GUB) is needed

R: FSD is already acting in this direction, unfortunately there have been no replies from WPs

A9: FSD at its general meeting shall discuss the renewal of the GUB with PLs

C: Some TSVV PIs reported a high load of the Gateway cluster

R: This can be temporary issue as also a number of nodes will be moves from Marconi-Fusion into the Gateway. Nothing was reported at the last Gateway operation committee

A10: FSD CO must bring this point to the attention of the next operation committee

Work Package Enabling Research: Theory&Modelling Projects, Inertial Fusion Energy Projects

4 **WPENR (IFE & MOD projects) Project Change Requests (PCRs) - 2021 (no PCRs received)**

None.

WPENR (IFE & MOD projects) Annual Work Plan

D. Kalupin provided a short overview of the Enabling Research Projects and coming events. The reporting from the ENR projects is expected at the following Project Board.

	Financial Overview WPAC and WPENR
5	<p>Financial Overview WPAC and WPENR</p> <p>E. Genangeli presented the financial summary and CWP budget revision:</p> <ul style="list-style-type: none"> the budget had to be revised to match the maximum grant amount; UKAEA; EPFL and CU beneficiaries are not currently part of the consortium; there is an associated reduction of resources in WPAC and WPENR. <p>Discussions:</p> <p>C: The work plan submitted to the commission corresponds to the previously foreseen amount of (~750M€), the work allocated to UKAEA and EPFL is supposed to be carried out as planned but to be covered with national funds for those beneficiaries as long as they are not associated.</p> <p>Q: When JDC plans to start?</p> <p>R: The JDC shall start on 01.11.2021, it will be located at JET and will be covered by national UK funds as other UKAEA contributions.</p> <p>Q: With the current budget evolution, will it be possible to cover HPC resources in 2024-2025?</p> <p>R: There are some reserved resources but a better answer can be only given after we know whether or not we get additional budget from the UK contribution, when the detailed situation is known.</p>
	<p>The next, 3rd PB-Theory meeting will be organized on 10th of March 2022, at 9:00-11:00 CET.</p> <p>The meeting material of the 2nd meeting will be available on INDICO at https://indico.eurofusion.org/event/1451/</p> <p>The meeting was adjourned</p>

List of open actions

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A8	Denis Kalupin Simon Pinches	FSD CO together with ITER RO to investigate the situation with establishing of new accounts and propose the solution	NEW
A9	Denis Kalupin Volker Naulin	FSD at its general meeting shall discuss the renewal of the GUB with PLs	NEW
A10	Denis Kalupin	FSD CO must bring this point to the attention of the next operation committee	NEW