



# EUROfusion

PROGRAMME MANAGER OFFICE

## **INVITATION TO SUBMIT PROPOSALS FOR THE 2017 PROGRAMME ON MEDIUM SIZE TOKAMAKS**

### **CALL FOR SCIENTIFIC COORDINATORS AND MODELLING COORDINATORS FOR THE 2017 PROGRAMME ON MEDIUM SIZE TOKAMAKS**

The programme on medium-size tokamaks (MST) managed under the Work Package MST1 complements the work at JET (WP JET1) to provide a step-ladder approach for extrapolations to ITER and DEMO. It also covers areas and regimes where MSTs have unique experimental capabilities and flexibility. In addition, modelling (integrated and first principle) for preparation and interpretation of experiments is an integral part of the MST1 work package. In 2017, the MST1 programme will focus on the following top three objectives:

- Exploring the applicability of type-II/grassy and Resonant Magnetic Perturbation suppressed ELM regimes as well as I-mode and QH mode, to ITER and DEMO with respect to SOL density, collisionality, metal wall compatibility and target heat and particle loads.
- Increasing the understanding, efficiency and portability of methods for disruption mitigation and avoidance and runaway electrons control.
- Exploring alternative scenarios making use of novel divertor configurations to reach  $P_{sep}/R$  with acceptable power and particle loads.

To do so, three MST devices will be used: ASDEX Upgrade (MPG, IPP Garching, Germany); TCV (SCP, Lausanne, Switzerland) and for the first time MAST-U (CCFE, Culham, United Kingdom). Further information is available from the MST1 wikis pages at [MST1 devices](#). The final dates for the MST1 campaigns<sup>1</sup> will be provided with the call for participation (expected launch date 9 December 2016) and following series of MST1 planning meetings (7 - 16 November 2016). In the meantime, the following dates have been sketched taking into account the machine availability and avoiding MST1 campaign overlap:

- ASDEX Upgrade MST1 campaigns: 20 March - 26 May 2017 and 9 Sept. -17 Nov. 2017.
- TCV MST1 campaign: 5 June - 28 July 2017.
- MAST-U MST1 campaign: 20 November - 17 December 2017.

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<sup>1</sup> The so called "MST1 campaigns" contains always a certain percentage of internal programmes.



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In order to focus the research on fewer experiments fully in line with the Roadmap programmatic headline deliverables and appropriately staffed, a new procedure for defining in detail the MST1 programme is proposed. It can be summarised as follow:

- A targeted list of 25 High Level Topics (HLT) (see Annex 1) has been predefined by the MST1 Task Force Leader and Deputy Leaders. This HLT list was presented at the 2017 Annual Work Plan meeting held mid-July 2016. For each topic, the main objectives are clearly identified. HLT contributing directly the top three objectives (see Annex 1) will be allocated more resources.
- Scientists are asked to enter proposals on how to best reach these main objectives. The proposals can be experimental strategy (on one or several MST1 devices), modelling activities and other complementary work (ex: analysis of existing data).
- Scientific Coordinators (SCs) are appointed for each high level topics (see their expected role in Annex 2) at an early stage. They will be asked, with the help of the MST1 task force leadership to integrate in the best way the different proposals received. By appointing SCs at an early stage, we hope to give them a stronger role with clear duties and more responsibilities. Appointment for two years will be envisaged when requested by the topic. For the selected SCs, extra manpower will be allocated in 2016 at a level of 1 person month to acknowledge the requested 2016 involvement. For 2017, a strong involvement (in the 3 person months range) is welcome. In parallel, Modelling Coordinators (MC) (see their expected role in Annex 2) that will at first, support the TFLs and SCs in the detailed programme planning will also be appointed (with also extra manpower in 2016 at a level of 0.5 person months).
- The “General Planning Meeting” is replaced by a series of open MST1 Planning Meetings (similar to the experimental Kick-off meetings, but open to everyone) for each of the high level topics. The detailed structure of the meetings will be determined by the TFLs together with the selected SCs. The expected participants will be proponents or scientists wishing to be involved later in the experimental/modelling teams. They will have the possibility to come under MST1 missions or to participate remotely. With the help of the relevant TFLs, the SCs will organise discussions on each high level topic, making sure that old results obtained on MSTs and JET are summarised and that the proposals made on the wikis are discussed/merged into achievable objectives for 2017. It is foreseen that this series of meetings will run from 7 until 16 November in Garching. A detailed agenda will be provided following discussion with SCs and MCs.
- The call for participation will be launched by the 9 December 2016. The main change would be that that each high level topic (that can contain experiments / modelling / ...) will have a detailed list of required competencies and foreseen resources.

Overall, it is expected that this process will help build stronger experimental teams and lead to a more efficient call for participation. So as to ensure that the process is not overly restrictive, there will still be some room in the call and programme for novel bright ideas that are outside the defined topics. Indeed, there will be the possibility to make proposals outside HLTs although it should be understood that only a small fraction of the MST1 resources (10%-20%) can be dedicated to these requests in order to ensure that the HLTs objectives can be met in the defined time frame. Such proposals will be reviewed and discussed in November, in the frame of the MST1 Planning Meeting series. If a proposal is selected by the TFLs, the main proponent will become the SCs.

With this letter, we ask, firstly to all interested scientists to enter proposals under the [2017 proposal MST1 wiki](#). We ask the scientists to carefully go through the objectives of the high level topics (see Annex 1 and 2017 proposal MST1 wiki) and to enter focussed proposals by Friday, 23



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**September 2016.** A guideline to enter proposals is attached as Annex 3 and also available from the wiki pages.

Secondly we ask you to propose SCs for high level research topics and MCs, using the Excel form provided as Annex 4. The interested scientists should carefully read what is expected from them (in Annex 2) and of course, be highly motivated. The Excel form with the proposed SCs and MCs should be sent back to [MST1-PARTICIPATION@euro-fusion.org](mailto:MST1-PARTICIPATION@euro-fusion.org) by **Friday, 23 September 2016**. Assuming that the proposal forms arrive all by this date, the selection will be provided back by the PMU, on Monday, 3 October 2016.

If you have any question related to this process, you can contact the PMU [MST1-PARTICIPATION@euro-fusion.org](mailto:MST1-PARTICIPATION@euro-fusion.org) and the MST1 task force leader's using [mst1-tfl@lists.euro-fusion.org](mailto:mst1-tfl@lists.euro-fusion.org) (see also [contact info](#)).

I trust that the strong involvement of your Research Unit in the use of the MST facilities under EUROfusion will continue during this preparation phase of the 2017 experimental campaigns.