14th Executive Committee Meeting of the
IEA Technology Collaboration Programmes for
Co-Operation on Tokamak Programmes (TCP-CTP)

ITER Council Room, ITER-IO Headquarters, Cadarache, France
Wednesday 20th December 2023, 16:00 CET → 18:00 CET

Participants: Shunsuke Ide (JP-Chair), Ambrogio Fasoli (EU), Duarte Borba (EU-Secretary), Matthew Lanctot (US), Chuck Greenfield (US), Alberto Loarte (ITER-IO), Yukata Kamada (ITER-IO), Indranil Bandyopadhyay (IN), Ge Zhuang (CN), Woong Chae Kim (KO), Sandor Zoletnik, Xavier Litaudon, Joseph Snipes, Maiko Yoshida, Tomohide Nakano (…),

Draft Minutes

The Chair, Shunsuke Ide (JP), welcomed the participants to the 14th TCP-CTP Executive Committee Meeting.

1. Approval of agenda and minutes of the last meeting

The Chair started the meeting by stating that the latest version of the agenda was distributed on Monday 18th December 2023. It was remarked that there were some changes in the reporting on point 4 and 5 with respect to the version distributed, namely regarding the reports by Woongchae Kim (KO) and Alberto Loarte (ITER-IO). It was pointed out that an additional point was added under any other business regarding the private sector involvement in ITPA activities, possibly following the "Limited Sponsor" approach foreseen in the CTP TCP implementing agreement following the modernisation in 2022.

Decision: The IEA TCP-CTP Executive Committee unanimously approved the Agenda for the 14th Meeting of the TCP-CTP Executive Committee "Agenda Point 1 - Agenda for the 14th Meeting of the TCP-CTP Exco Wednesday 20th December 2023 Version 3".

Regarding the minutes from the previous meeting, circulated earlier in the year on 9th January 2023, there were no further comments or suggestions to the document distributed.

Decision: The IEA TCP-CTP Executive Committee unanimously approved the Minutes of the 13th Meeting of the TCP-CTP Executive Committee " Agenda Point 1 - Agenda for the 14th Meeting of the TCP-CTP Exco Wednesday 20th December 2023 Version 3".

2. Report from the CTP TCP Chair

The Chair reported on the TCP Universal Meeting that took place on 25-26 October 2023, see summary in Annex I*; and that the next Fusion Power Coordinating Committee (FPCC) meeting, will be held in Greifswald on 24-25 January 2024. Two items in the FPCC meeting agenda were discussed. The proposal for a joint article to be prepared by the fusion TCPs for a Special issue to be published in the Fusion Engineering and Design journal and the 2-hour panel discussion on the collaboration between fusion TCPs and the private sector.

Regarding the proposal for a Fusion Engineering and Design joint article, it was agreed to seek further information regarding the scope and objectives of this proposal.

Regarding the 2-hour panel discussion on the collaboration between fusion TCPs and the private sector, the CTP TCP Executive Committee took note of the input provided by the CTP TCP for the preparation of the discussion in Annex II** and agreed to discuss this matter further under point 9. It was added that the Chair of the CTP TCP Shunsuke Ide plans to participate in person in the FPCC meeting, together with Duarte Borba.

3. Accession of new parties to the CTP TCP (Switzerland and UK)

The Chair summarised the status of the accession of new parties to the CTP TCP covering the recent cases related to Switzerland and UK.

<u>Switzerland</u>

Switzerland joined the CTP TCP officially as a Contracting Party on 18th October 2023 and the nominated representatives from Switzerland are Ambrogio Fasoli and Paolo Ricci. It should be noted that negotiations regarding the Association of Switzerland to Euratom are ongoing with positive steps taken recently and association to Euratom in the coming year is possible. Not clear what steps need to be taken when the Association of Switzerland to Euratom is completed as regards to the participation in the CTP TCP.

UK

The IEA CTP TCP Executive Committee approved by written procedure ending on 31st August 2022 to invite the Government of the United Kingdom to join the CTP TCP as a Contracting Party. Exchanges between IEA and the UK Government are ongoing, and it is expected that UK joins the CTP TCP in the coming days or weeks[1]. It was noted that the negotiations between the UK and the European Commission ended with the decision that the UK Association to Euratom will not happen in the foreseeable future.

It was stressed that all members of the CTP TCP Executive Committee gave their explicit approval to the invitation of the UK and Switzerland. In the case of the EU this approval was given by Fabio Belloni via e-mail as representative of the European Contracting Party Euratom.

4. Reports on the completed workshops and personnel assignments for 2023

The report on outgoing assignments from the EU, JA, US, KO and ITER-IO were presented by Richard Kamendje "Agenda point 4 and 5 - EU-Assignments-2023-2024_IEA_TCP-CTP-Kamendje", Ge Zhuang "Agenda point 4 and 5 - CN-Summariztion of plasma research collobateration in 2023 CN", Shunsuke Ide "Agenda point 4 - JA_Personnel_Exchange_JA2023_v2r", Matthew Lanctot "Agenda point 4 and 5 - CTP US Exchanges 2023 2024", Woongchae Kim "Agenda point 4 - Personnel Exchange_KR2023_KR_EU_report" and Alberto Loarte "Agenda point 4 - ITER_Completed 2023 Assignments".

In the discussion, it was remarked that the ITER-IO participation in the JT-60SA integrated commission and experiments is carried out under the collaboration agreement between the ITER-IO and QST. It was added that the assignments from QST to Tokamak Energy in the UK was covered by a specific agreement between QST and Tokamak Energy.

Decision: The IEA TCP CTP Executive Committee adopted the Personnel Assignment reports for Jan. 2023 – Dec. 2023.

[1] The UK have informed IEA in January 2024 that clearance have been received to proceed with the membership process in order to join the CTP, ESEFP, FM, NTFR, PWI and ST TCPs. The IEA are still waiting to receive the formal paperwork, but the process should be completed soon.

5. Proposals for workshop, personnel assignments, and remote participation 2024

The EU, CN, JA, US, KO and ITER-IO proposals for workshops, personnel assignments, and remote participation 2024 was presented by Richard Kamendje "Agenda point 4 and 5 - EU-Assignments-2023-2024_IEA_TCP-CTP-Kamendje", Ge Zhuang "Agenda point 4 and 5 - CN-Summariztion of plasma research collobateration in 2023 CN", Shunsuke Ide "Agenda point 5 - JA_Personnel_Exchange_JA2024_v2", Matthew Lanctot "Agenda point 4 and 5 - CTP US Exchanges 2023 2024", Woongchae Kim "Agenda point 5 - Personnel Exchange_KR2024_KR_EU_plan" and "Agenda point 5 - Personnel Exchange_KR2024_KR_US_plan", and Alberto Loarte "Agenda point 5 - ITER_Planned 2024 Assignments".

In the discussion, it was remarked that the assignments to the UK were included in the European tables, but it was pointed out that this might not be the correct approach as the UK is no longer part of the EU.

6. Report from the IEA Secretariat (All)

IEA representatives were not able to attend the meeting in this occasion, therefore, the input from the IEA was conveyed where possible and appropriate during the discussion on the specific points.

7. Discussion of annual report (TBD, All)

The IEA requested the TCPs and CICLOP to forward their written annual briefings by 2 January 2024. The IEA CTP TCP Secretary will prepare the CTP TCP report.

8. CICLOP: A Joint Task of the Co-operation on Tokamak Programmes (CTP) and Stellarators and Heliotrons (SH) Technology Collaboration Programmes (TCPs) (Chair)

It was stated that CICLOP is an initiative for the Coordination on International Challenges on Long duration Operation. Xavier Litaudon circulated a presentation "Agenda point 8 - CICLOP-vf" detailing the scope and main CICLOP activities.

The proposal for the establishment of the CICLOP Joint Task between the Co-operation on Tokamak Programmes (CTP) and Stellarators and Heliotrons (SH) Technology Collaboration Programmes (TCPs) has been circulated on 9th May 2023. However, an issue has been raised

regarding that the membership of the SH TCP and CTP TCP is different. Therefore, the proposal presented at the meeting was to establish initially the CICLOP Joint Task including the parties that are members of both TCPs to avoid any delays in establishing this agreement. Given the fact that Korea is not a member to the SH TCP it is imperative that agreement from Korea is given before establishing this Annex, initially without the full participation of Korea, possibly with observer status. As the participation of Korea is important, it is proposed to discuss in the meanwhile the options available to fully involve Korea as soon as possible. Korea confirmed that it agrees with these proposals and support was given by the other members of the IEA TCP CTP Executive Committee with JP requesting some time to double check internally before giving the final approval.

Decision: The IEA TCP CTP Executive Committee agreed pending confirmation from Japan to establish initially the CICLOP Joint Task including the parties that are members of both TCPs (CTP and SH), i.e. initially without the full participation of Korea with observer status and proposed to discuss in the meanwhile the options available to fully involve Korea as soon as possible.

9. Further discussions on any outstanding issues (All), Participation of private sector involvement in ITPA activities possibly following the "Limited Sponsor" approach.

The US communicated the interest of private companies to have the option to be involved in ongoing the ITPA activities. This topic was first raised within the ITPA CC in 2020 when a process was developed by the ITER-IO to permit the participation of privately funded staff in the ITPA Topical Group meetings. At that time, the need for a process for direct involvement in ITPA joint experiments was discussed but not implemented in sufficient detail to be used by participants. In the meantime, that is in 2022, the modernization of the IEA CTP Implementation Agreement was approved by the contracting parties, putting in place the "limited sponsor" framework, which is a streamlined procedure for involvement by a non-contracting party in one TCP workstream for a period of less than three years.

In 2023, the US suggested that a joint ITPA CC and CTP TCP Executive Committee working group be formed to establish an explicit procedure for utilising the limited sponsor framework to facilitate private sector involvement in the ITPA. The proposed working group deliverables would include:

- a pre-proposal process for considering potential engagements,
- agreement templates for Limited Sponsors and Sponsors (largely following existing CTP IA documents),

- a written procedure describing how to elaborate specific agreements and obtain formal approval/concurrence from ITPA CC and CTP TCP Executive Committee.

This information would inform future discussions by the ITPA CC and CTP TCP Executive Committee on future implementation. This issue was discussed at length by the CTP TCP Executive Committee.

The following concerns were raised:

- the need to document any bilateral exchange of information and the corresponding mutual benefit of these exchanges,
- whether the limited sponsor framework was being used successfully by other TCPs for the purposes of facilitating private sector participation,
- whether the terms of sponsorship were considered sufficient to protect background and shared Intellectual Property,
- whether there were notable differences between a (limited) sponsor and a contracting party,
- the provisions for the distribution of modelling data and codes in addition to sharing experimental data and databases.

It was emphasised that in addition to the privately funded initiatives in the US, there are interests in other countries such as the case of Europe and China. The CTP TCP Executive Committee chair and secretary agreed to follow up on these questions with IEA in the near term including at an the upcoming FPCC meeting to be held in Greifswald, Germany.

Date and venue of the next meeting

The 15th Executive Committee Meeting of the IEA Technology Collaboration Programmes for Co-Operation on Tokamak Programmes is provisionally scheduled for Friday 6th December 2024 from 16:00 – 18:00 CET at ITER Council Room, ITER-IO Headquarters, Cadarache, France.

Annex I - TCP Universal Meeting on 25-26 October 2023*

- ***TCP Coordination Group proposals****. In advance of the 22 December deadline for submitting proposals, we are in touch with several TCP colleagues on the preparation of the first round of TCP Coordination Group proposals. These draft proposals will be circulated with all TCPs next week, offering everyone an opportunity to signal their interest to participate. The proposals will be presented to CERT in January for approval.*
- ***Joint meeting calendar 2024****. To improve coordination across the IEA energy technology network and to provide better visibility of TCP events, we have created on the Delegates Hub a joint calendar. We invite TCP secretaries or desk officers to add, when dates are confirmed, your next ExCo meeting, or any other event that you would like to share with the network. Also, we would be grateful for any feedback on how the calendar could be further improved.*
- ***Overview of CERT, Working Parties and TCP contacts****. To address some of the remarks raised at the TCP Universal Meeting on improved internal communication, we have made available on the Delegates Hub a document with the contact details of CERT and Working Party cabinets as well as of all the TCP Chairs and Secretaries. Should you realise that any information needs to be updated, please let us know. Please refer to the Data Protection Notice of the TCP Handbook for information regarding the IEA's processing of your personal data and your rights in relation to that data.*
- ***TCP 2024 webinars.*** *To follow up on some comments made during the TCP Universal Meeting, we are planning to organise at least 2-3 TCP webinars next year. The purpose of these webinars is to facilitate discussions on topics related to improving the overall operation of the network and to share lessons learned between TCPs. A few ideas that were raised during the TCP Universal Meeting and that could be brought forward are: 'the mechanics of multi-TCP collaboration'; 'how to ensure a sustainable growth over time'; 'an introduction to the IEA energy technology network for newcomers' and 'exchange of good practices on external communication'. If you have other ideas, please send proposals to Anna (anna.kalista@iea.org) before 22 December.*

Over the next weeks and months, we will also be looking, as part of the ***CERT Review,*** *at how to further improve the request for extension mechanism and communication. We will be reaching out to a few TCPs that were particularly active at the TCP Universal Meeting when these matters were discussed but also welcome others that want to be involved in the next steps of those processes. For clarity, any TCP that is currently in the process of preparing documents for the request, please proceed as originally planned.*

Once again, let us thank you for all your support throughout 2023 and looking forward to continuing this excellent collaboration next year.

Annex II - FPCC meeting, to be held in Greifswald on 24-25 January 2024*

Request for input from fusion TCPs in preparation to the discussion on collaboration between fusion TCPs and the private sector:

a. Activities of your TCP that might be of interest to private companies and each of them summarized in one paragraph. Please clarify, if possible, activities of potential interest to fusion start-ups and activities of potential interest to established (nuclear) supply chain companies.

Quite a number of private companies, certainly the ones working on the tokamak and stellarator lines, are interested in Tokamak and Stellarator data, especially JET DT data are in the interest of private companies, but also in general all the data that are related to high performance operation. A question is of course what fusion research laboratories get back from the private companies in return for providing the companies with the data.

b. In line with the above, please identify and propose private companies that could be invited to participate in the panel discussion.

For the TCP CTP the tokamak-based companies that are of most interest are ***Commonwealth Fusion Systems based in the US*** *and* ***Tokamak Energy based in the UK****. It assumed that other TCPs see a value in stellarator-based companies or even other companies.*

c. To help organise the panel discussion, please indicate whether you plan to participate in-person in the FPCC meeting.