

Minutes of IFAC TC 2.4 Optimal Control Meeting

22 January 2021, Online

Chair: Eric Kerrigan

1. Welcome

EK welcomed everybody. All current TC members were invited. Approximately 32 people attended.

2. What does a TC do?

EK reminded everybody what a TC does and highlighted the following:

- Fostering cooperation and communication among specialists within their particular field of interest
- Planning and monitoring IFAC Technical Events (Symposiums, Conferences, and Workshops) with the NMOs acting as hosts
- Promoting their respective technical areas in other ways, e.g. establishing contacts with other International Organizations, publishing reports on selected topics
- Promoting interest in emerging control fields
- Education
- Engagement between Academia to Industry
- Build some presence on the www and/or on social media
- Acting as Associate Editors, IPC members and reviewers for IFAC events and the World Congress.

3. Scope of TC

EK mentioned that the scope of the TC has, since the World Congress, been revised to the following:

“The development and application of theory and methods for solving optimal control and planning problems, the development of numerical optimization methods, as well as the closed-loop implementation of optimal controllers on real-time computer systems and networked architectures. Particular methods include, but are not limited to, the calculus of variations, Pontryagin's maximum principle, dynamic programming, model predictive control, optimization based estimation, and differential games. Control methodologies can be based on first-principles models, data-based models or a combination of both.”.

He asked for everyone to consider this and contact him with further suggestions for changes, if necessary.

After input from Gabriele Pannocchia, the word “data-based” was changed to “data-driven”.

All TC members are to consider the updated scope and send suggestions to EK.

4. Membership

EK announced that there are currently 67 TC members and that the Vice Chairs are:

- Stefano Di Cairano (US) - Vice Chair for Industry
- Paul Goulart (UK) - Vice Chair for Publication
- Gabriele Pannocchia (IT) - Vice Chair for Education
- Sergio Lucia (DE) - Vice Chair for Social Media
- Stefan Pickl (DE)
- Alexander Tarasyev (RU)
- Anatolii Kleimenov (RU)

The member list and contact details for Chairs and Vice-chairs can be found on the TC website: <https://tc.ifac-control.org/2/4>

5. Upcoming Events

It was noted that TC 2.4 is the main sponsor of the following upcoming event:

- NMPC 2021: 7th IFAC Conference on Nonlinear Model Predictive Control, Bratislava, Slovakia, 11-14 July 2021. nmpc2021.org

It was noted that the TC should start planning for the next NMPC (to be held in 2024) as soon as possible and interested TC members were invited to contact EK.

It was also announced that, after a call at the Workshop on Control Applications of Optimization (CAO) 2018, hosts for the following three events have been chosen, but that final applications to IFAC still need to be completed:

- CAO 2022: Paris-Saclay at CentraleSupélec, France. NOC chair: Sorin Olaru
- CAO 2025: Krakow, Poland. NOC chair: Andrzej Turnau
- CAO 2028: München, Germany. NOC chair: Stefan Pickl

5. Working Groups

EK mentioned the interest in establishing the following working groups, based on previous discussions with TC members:

- Establishing an Online Seminar Series on Optimization and Optimal Control
 - Proposed by Thulasi Mylvaganam
 - Two-three times or more per year
 - Exploit current situation and “online momentum” to kick-start a new activity that can be continued post-Covid if successful
 - Stream live and record (with agreement of speakers)
- Transitioning of optimal control tools to industry
- Benchmarking
- Establishing a workshop/conference on Optimal Control.

Interested TC members who wish to lead or participate in the above working groups were asked to contact EK.

6. Online Presence and Social Media

EK pointed out that we need a Vice-Chair for Social Media, to liaise with Linda Bushnell and that members approach him about this if they are interested in taking on this role. He also asked for any volunteers who would be interested in regularly updating the website (currently <https://tc.ifac-control.org/2/4/>), provide material for blogs, tweets, etc.

7. Report from Industry Vice Chair

Stefano Di Cairano (SDC) commented that his main role is as liaison between the TC and the recently established IFAC Industry Committee. The committee is currently looking for participants, including academics who collaborate with industry. Interested TC members are encouraged to contact SDC for further information.

8. Report from Education Vice Chair

Gabriele Pannocchia (GP) asked TC members to report to him any educational activity that TC members are involved in or planning. This includes educational software development and pre-conference workshops.

9. Report from Social Media Vice Chair

Sergio Lucia (SL) reported some links to general IFAC social media venues:

- Facebook <https://www.facebook.com/IFACcontrol/>

- LinkedIn <https://www.linkedin.com/groups/13400016/>
- Twitter https://twitter.com/IFAC_Control
- YouTube <https://www.youtube.com/channel/UCLcWoqbVNxo9rVSS9NKQDeA>
- IFAC Blog <http://blog.ifac-control.org>

If TC members wished to contribute to these venues, then the following needs to be noted:

- All content needs to be approved by the IFAC secretariat secretariat@ifac-control.org
- To avoid too much duplicate work these venues are planned for the most important announcements:
 - Conferences or workshops
 - A detailed post on a TC event
 - Detailed blog entries on some TC topics

TC 2.4 has the following dedicated social media outlets:

- Twitter [@ifac_tc_24](https://twitter.com/ifac_tc_24) ; https://twitter.com/ifac_tc_24
- LinkedIn <https://www.linkedin.com/groups/9020534/>

SL suggested the following for ideas for contributions:

- TC members can send content directly to SL (e.g. related events, workshops, EU-projects, etc...)
- Mention the TC in your tweets and TC-related content will be retweeted
- Other ideas and interest in contributing could include:
 - informal threads on optimal control history
 - Optimal control-related GIFs
- Teasers (20-60 sec videos) explaining new OC-related papers + link to paper

The official website for TC 2.4 is <https://tc.ifac-control.org/2/4>

10. Report from Publications Vice Chair

EK passed on apologies from Paul Goulart (PG), who was not able to attend. EK also passed on a request from PG that TC members contact him on ideas and proposals for areas/topics of potential special issues, or other publications-related matters.