Minutes of IFAC TC 2.4 Optimal Control Meeting

27 June 2019, ECC19, Naples (Italy)

Meetings Chairs: Paul Goulart, Gabriele Pannocchia (Vice-Chairs of TC 2.4)

1. Welcome

PG and GP welcomed all TC members attending the meeting, also on behalf of the TC Chair Eric Kerrigan who could not attend the meeting. They communicated that this year the meeting also takes place during ACC (early July 2019) in Philadelphia.

2. Overview of what a TC does

The chairs 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

3. Scope of TC

PG read the current description of the Scope of TC from the IFAC Web Site:
"The development and application of theory and methods for solving optimal control problems, the development of tailored numerical optimization methods, as well as the closed-loop implementation of optimal controllers on real-time computer systems. Particular methods include, but are not limited to, the calculus of variations, Pontryagin's maximum principle, dynamic programming, model predictive control and differential games. Control methodologies can be based on first-principles models, data-based models or a combination of both."

The attendees discussed this description and proposed the following updated Scope:
"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."

4. Membership

The list of current members of the TC (https://tc.ifac-control.org/2/4/members) could be expanded, in particular by inviting more researchers to in particular outside Europe. Everyone interested to be involved as TC members should contact Eric Kerrigan.

5. Online presence and social media

The chairs 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. They 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.

Sergio Lucia (TU Berlin) offered to serve, and all attendees approved this proposal.

6. Events for triennium 2020-2023, including NMPC2021 and CAO2021/2

The chairs reported that the main events for triennium are:
- IFAC NMPC2021 which be held in Bratislava (Slovakia). GP recommend to point out to the NOC that in the same summer (June 13-16) there will be IFAC ADCHEM2021 in Venice (Italy), which will attract mainly the process control community. It is then recommend to select a date not conflicting with that one.
- Next IFAC CA0 will be held in 2021 or 2022, but this has not been decided yet.

7. IFAC World Congress 2020, including workshops and invited/special sessions

The chairs recalled that members of TC are encouraged to propose invited/special sessions for the upcoming IFAC World Congress 2020 to be held in Berlin, as well as to promote workshops.

Daniel Limon proposed to organize an "MPC basics" workshop and Gabriele Pannocchia volunteered to help him in the evaluation of the idea.

8. Working groups

The chairs recalled that there are several working groups in the TC, although their activity is not always known. WGs chairs are recommend to improve their visibility, e.g. by proposing invited/special sessions at next IFAC World Congress (cfr. point 7). Moreover, new WGs are solicited.

The following proposals of new WGs were made during the meeting:

- Paul Goulart proposed to establish a new WG on "Transitioning tools from academia to industry".
- Sergio Lucia proposed to establish a new WG on "MPC and learning".

9. AOB

The chairs reported that the TC chair (Eric Kerrigan) term will finish in 2020, but he is eligible to continue for the next triennium .EK encourages new candidatures for the next triennium (2020-2023).