



EIROforum workshop 2022: Robotics & Remote operation- Summary Report

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Change Record from previous version

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All	Initial release of the document

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1 - 3 June 2022
13:30 - 18:00 CET



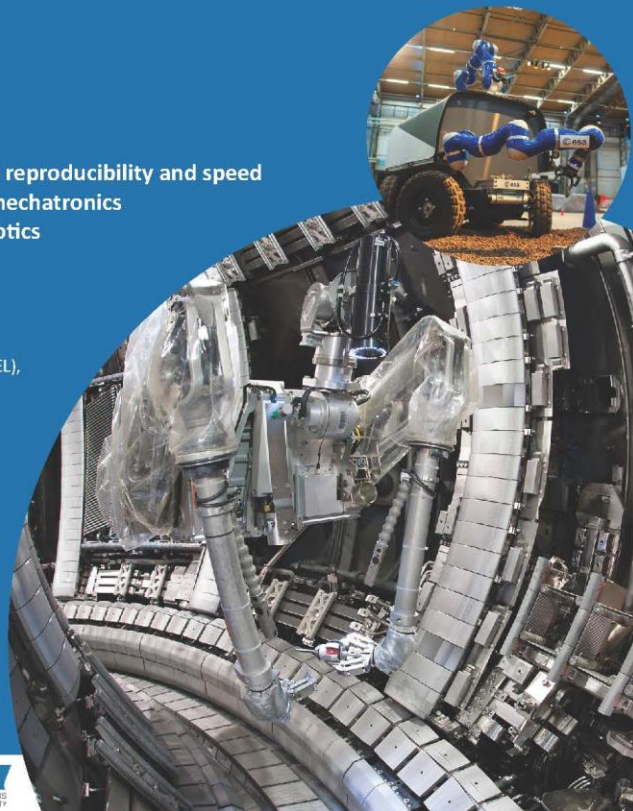
Robotics & Remote Operation

EIROforum Workshop

- Remote handling robots, precision, high reproducibility and speed
- Instruments automation, robotics and mechatronics
- Radio protection, maintenance and robotics
- Remote control experiments platforms
- Telerobotics and orbital robotics

Thibaut Prod'homme (ESA), Steffen Hauf (European XFEL),
Thomas Schneider (EMBL), Petra Riedler (CERN),
Paolo Mutti (ILL), Jean-Claude Biasci (ESRF),
Sebastian Egner (ESO), Andrea Murari (EUROfusion),
João Figueiredo (EUROfusion)

Register before 25 May (Sun) 2022 at
<https://indico.esrf.fr/event/4/>



1. Overall summary

The EIROForum Workshop is a bi-annual event, which is organized by the Instrumentation Working Group (IWG) of the EIROForum (CERN, EMBL, ESA, ESO, EuXFEL, ESRF, EuroFusion, ILL). The workshop covers a different topic every time, which is of common relevance for all the organizations of the EIROForum. The topic of the workshop in 2022 was “Robotics & Remote Operation”.

The workshop was scheduled as a hybrid event i.e. all the participants participated online and the organisers had the possibility to attend in-person. The workshop took place from Wednesday 1st June 2022 to Friday 3rd June 2022 and was co-hosted by the ESRF and ILL.

The workshop ran over 2 afternoons and one morning with in total 17 talks on Robotics and remote operation in the field of Particles Physics, Nuclear Fusion, X-ray Free-Electron Laser, Synchrotron Radiation, Earth Observation and Astronomy.

Regarding the organisation for the people onsite, on the first morning two visits were organised;

- Visit of the ILL reactor
- Visit of ESRF EBS machine control room and ID30 beamline.

On the second morning, discussions took place as a hybrid meeting with all the members of the working group, covering the following topics;

- School on Instrumentation 2023
- Topical workshop om detectors
- Topical workshop 2024
- Upcoming monthly meetings topics

The feedback by the participants through the questionnaire was rather limited but was overall very positive. There was a preference for an online event with more time dedicated to discussion. The format of three half-days was appreciated, however, an additional half-day would have made it possible to better balance the days or giving more time for discussion. The technical platform worked very well. All participant who answered the questionnaire considered the participation to this workshop worthwhile.

Further information about the workshop can also be found on the dedicated website:

<https://indico.esrf.fr/event/4/>

2. Programme

2.1 Scientific Programme

The scientific programme was organised according to the theme of the workshop (Robotics and Remote operation) divided in 8 sessions (for each institutes).

There were 2 to 3 presentations by each member institutes of EIROforum. The talks were 30 minutes each including questions.

We had the opportunity during the workshop to have two invited speakers:

- **Anette Stahl – NTNU:** *“Robotics and vision based autonomic systems in challenging environments”*
- **Kim Nergaard – ESA:** *“Getting ready for EL3 operations of robotic surface assets on the Moon – Learning by doing”*

a) Programme Overview

	Wednesday 01/06	Thursday 02/06	Friday 03/06	
AM 1	Visit of ILL	Discussion with all member of the WG	9:00 ILL - 2 x 30'	
	Visit of ESRF		10:00 CERN - 2 x 30'	
BREAK				
AM 2			11:30 EMBL - 2 x 30'	
LUNCH				
PM 1	13:30 Welcome	13:30 EUROfusion - 1 x 1'		
	14:00 European XFEL - 2 x 30'	14:30 ESRF - 2 x 30'		
	15:00 ESO - 2 x 30'			
BREAK				
PM 2	16:45 Invited Speaker - 1 x 1'	16:00 ESA - 2x30'		
		17:00 Invited Speaker - 1 x 1'		

b) Detailed programme

The detailed programme (including lectures' title and lecturers) together with the presentations are available online at this link:

<https://indico.esrf.fr/event/4/timetable/#20220601.detailed>

Wednesday 1st June 2022	
Session #1 European XFEL	
EHSAN, Wajid	<i>The FXE Robotic Arm - Integration and Applications</i>
PRESTON, Thomas	<i>Remote User Operation at the European XFEL</i>
Session #2 ESO	
BE BRUCK, Carlos	<i>The challenges of remotely operating an astronomical observatory</i>
BEARD, Steven & WILLEMSE, Bart	<i>Control and Collision Avoidance with the MOONS Fibre Positioners</i>
BRILLIANT, Stéphane	<i>Remote Operations of the VLT</i>
Invited Speaker	
STAHL, Annette	<i>Robotics and vision based autonomic systems in challenging environments</i>

Thursday 2nd June 2022	
Session #3 EUROfusion	
SYKES, Nick	<i>Meeting the challenges of remote maintenance of Fusion power stations -</i>
Session #4 ESRF	
WATIER, Yves	<i>Robotic applications at the ESRF -</i>
MEYER, Jens	<i>Remote user operation of ESRF experiments -</i>
Session #5 ESA	
VISENTIN, Gianfranco	<i>Overview of robotics at ESA -</i>
WORMNES, Kjetil	<i>ANALOG-1 controlling a rover from space -</i>
Invited Speaker	
NERGAARD, Kim	<i>Getting ready for EL3 operations of robotic surface assets on the Moon – Learning by doing</i>

Friday 3rd June 2022	
Session #6 ILL	
MUTTI, Paolo	<i>NOMAD Remote: controlling scientific operations from a distance</i>
WEBER, Tobias	<i>Motion planning for triple-axis spectrometers</i>
Session #7 CERN	
GARGIULO, Corrado & TEOFILI, Lorenzo	<i>Robotics in future HEP particle detectors</i>
DI CASTRO, Mario	<i>Robotic Solutions for Remote Maintenance in Accelerators Complex at CERN</i>
Session #8 EMBL	
APP, Gergely	<i>EasyGrid: automated Cryo-Electron Microscopy sample grid preparation and control</i>

2.2 Social Programme

Two dinners were organised on Wednesday 1st June and Thursday 2nd June for the people that were present onsite.

No specific events were organised for the online participants.

3. Organisation

The main organisers and chairs of the EIROforum workshop 2022 Jean-Claude Biasci (ESRF) & Paolo Mutti (ILL) were supported by:

- A Scientific Organising Committee (SOC) to elaborate the scientific programme of the workshop,
- A Local Organising Committee (LOC) to organize the workshop logistics and channel the communication with the workshop participants.
- And Act&Match, the webinar platform, facilitated the communication with the speakers for the technical test and to ensure the smooth running of the hybrid event.

3.1 Scientific Organising Committee (SOC)

The Scientific Organising Committee (SOC) consisted of all members of the Instrumentation Working Group (IWG) of the EIROforum:

- Thibaut Prod'homme (ESA)
- Petra Riedler (CERN)
- Joao Figueiredo (EUROfusion)
- Thomas Schneider (EMBL)
- Sebastian Egner (ESO)
- Jean-Claude Biasci (ESRF, organiser)
- Paolo Mutti (ILL, organiser)
- Steffan Hauf (European XFEL)

3.2 Local Organising Committee (LOC)

The Local Organizing Committee (LOC) consisted of:

- Jean-Claude Biasci (ESRF, chair)
- Kimberley Robert (ESRF)
- Paolo Mutti (ILL, chair)
- Sarah Kelleher (ILL)

3.3 Act&Match

Our contacts at Act&Match were :

- Marine Giraud (Act&Match)
- Maxence Dorut (Act&Match)
- Maxime Dalcin (Act&Match)

4. Communication

The call for registration was first released mid-March internally and externally by all EIRO organisations through email, intranet posts, posters, the EIROforum and workshop websites.

Each member of the organising committee was asked to promote the workshop in his or her respective institutes.

Promotional emails were sent to the different Post-doc responsible for each institute. Several reminder emails were sent out. The registration date was pushed back allowing participants to register as late as possible before the event.



Jun 1 – 3, 2022
Remote event
Europe/Paris timezone

Enter your search term

Overview

Workshop poster

About EIROForum

Workshop topics

Timetable

Keynote speakers

Speaker List

Registration

Contact

✉ kimberley.robort@esrf.fr

✉ kelleher@ill.fr

The 2022 EIROforum Topical Workshop on Robotics & Remote Operation organised by the Instrumentation Working Group, will be held from 1st-3rd June 2022.

The workshop will be co-hosted by the ESRF & ILL, but due to the current situation, will be held as an online event.





EIROforum events

« All Events

This event has passed.

EIROforum Topical Workshop on Robotics and Remote Operation

1 Jun 2022 - 3 Jun 2022

The 2022 EIROforum Topical Workshop on Robotics & Remote Operation will be held from 1-3 June 2022. The workshop is being organised by the Instrumentation Working Group and will be co-hosted by ESRF & ILL.

About the workshop

Robotic systems are becoming essential in modern research facilities. Such systems make the automation of experiments possible, allowing researchers to work around the challenges of distance and difficult environments, and helping them gain precision and speed.

The COVID-19 pandemic has added a new dimension to the deployment of remote access to instruments and experiments, providing new opportunities as well as increased flexibility.

This workshop on robotics and remote operation will bring together experts in the fields of computer science and engineering from leading European research centers.

Topics covered

During the workshop, experts will discuss the current state and future applications in the fields of:

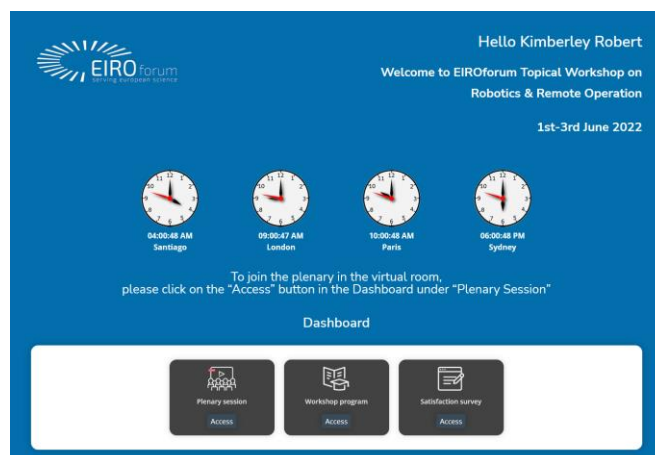
- Instruments automation, robotics, and mechatronics
- Remote handling of robots, precision, high reproducibility and speed
- Radio protection, maintenance, and robotics
- Telerobotics and orbital robotics
- Remote control experiment platforms



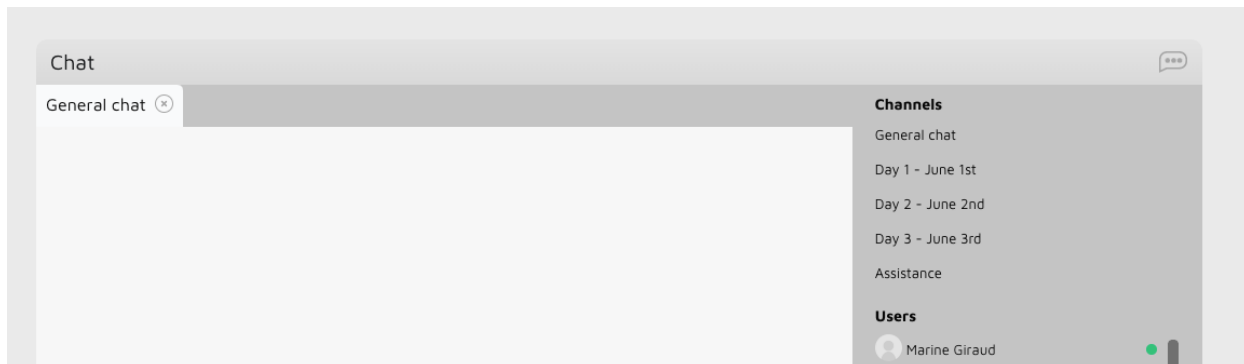
Download the event's poster as pdf

Act & Match, the webinar platform that provided the set-up for the event, created a welcome page and personal logins for all participants. All event information was centralized to this page such as the timetable, videos as well as the plenary room for the talks.

A technical hotline was also put in place in case any participant had technical issues during the talks.

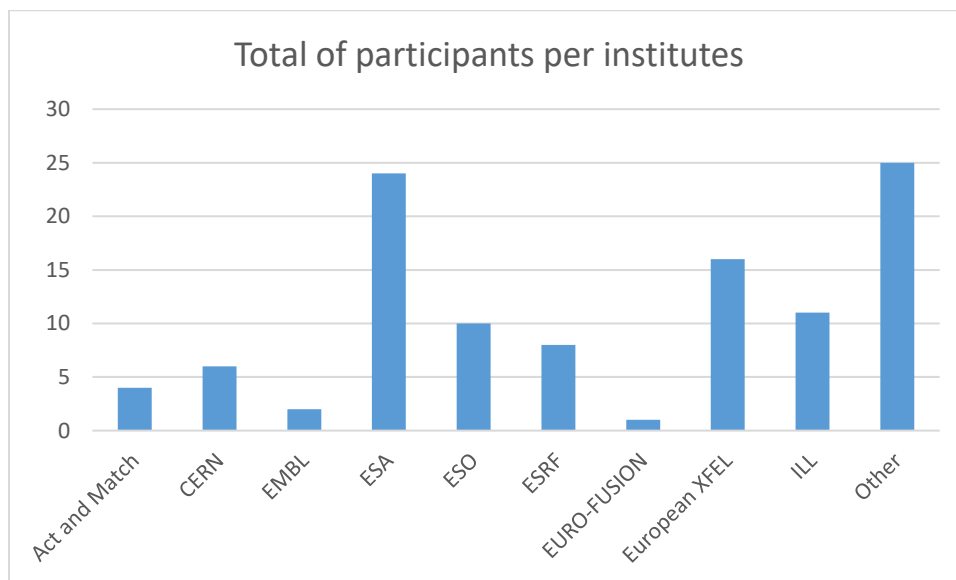


The chat was open throughout the event so that participants and speakers were able to communicate. A specialized Q&A chat took place at the end of each session.



Thank you emails were sent out to all participants and speakers at the end of the event.

5. Participation & Feedback



Due to the online nature, 138 registered to the event and over 74 attended the workshop (organizers and speakers).

- Day 1: 68 unique participants (duration from less than 1 hour to full time)
- Day 2: 28 unique participants (duration from less than 1 hour to full time)
- Day 3: 16 unique participants (duration from less than 1 hour to full time)

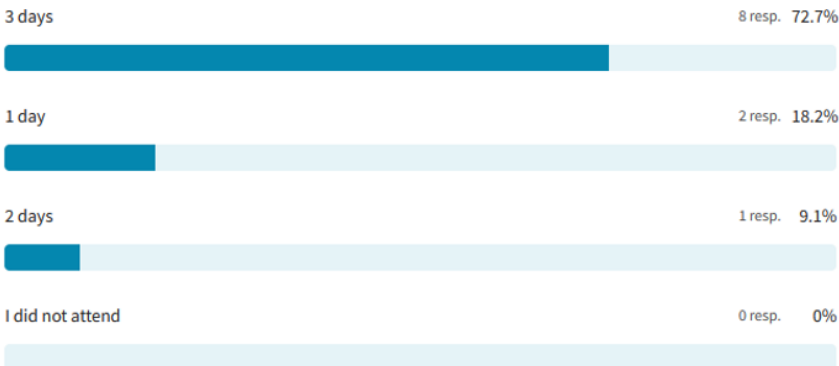
A satisfactory survey was put in place to collect the feedback from the participants. In total, we received 11 responses, which is not much considering that, we had 74 participants. We therefore cannot consider these responses as sufficiently representative.

the IWG recommends that for the next workshop, both speakers and organisers, should be on-site with the possibility to attend from remote for participants without contribution, in order to maximise the exchange of information between experts while preserving the a wide audience from all around the world. However, this may not be compatible with 3 day-long workshop.

Below the questions with the answers.

1) How many days did you attend the workshop?

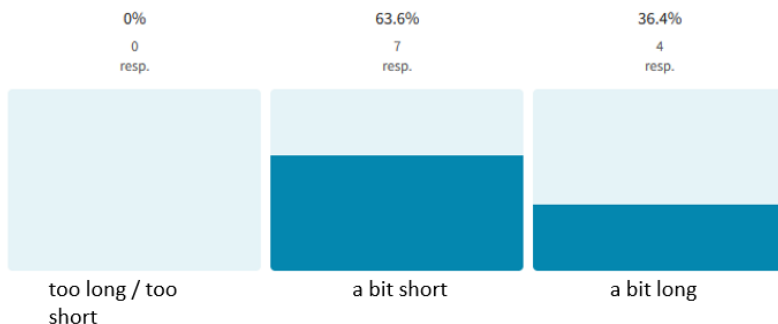
11 out of 11 answered



2) How did you like the format of the workshop (3 half days)?

11 out of 11 answered

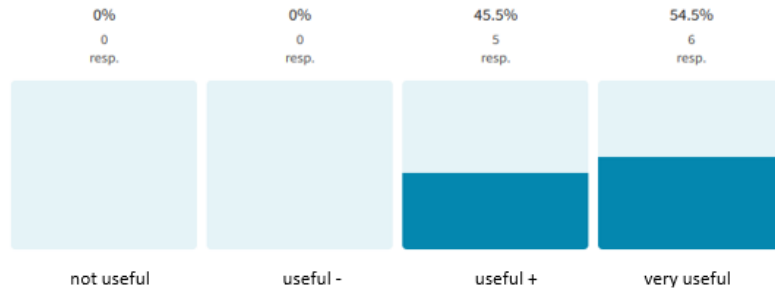
2.4 Average rating



3) How useful did you find the workshop?

11 out of 11 answered

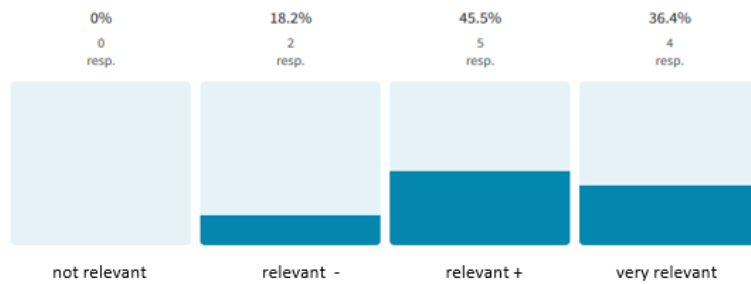
3.5 Average rating



4) How relevant were the presentations for your area of work

11 out of 11 answered

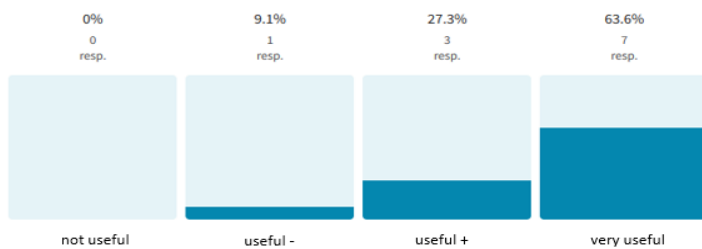
3.2 Average rating



5) How useful did you find the Act&Match platform?

11 out of 11 answered

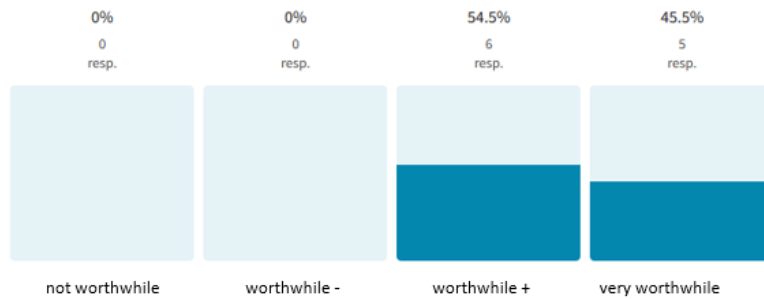
3.5 Average rating



6) Overall, was it worthwhile participating in this workshop?

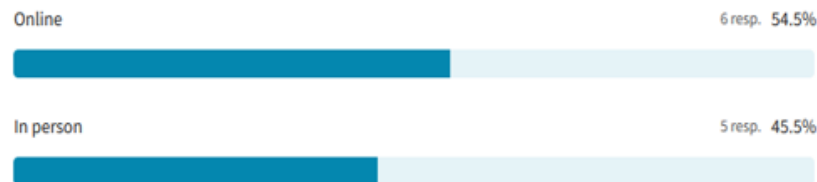
11 out of 11 answered

3.5 Average rating



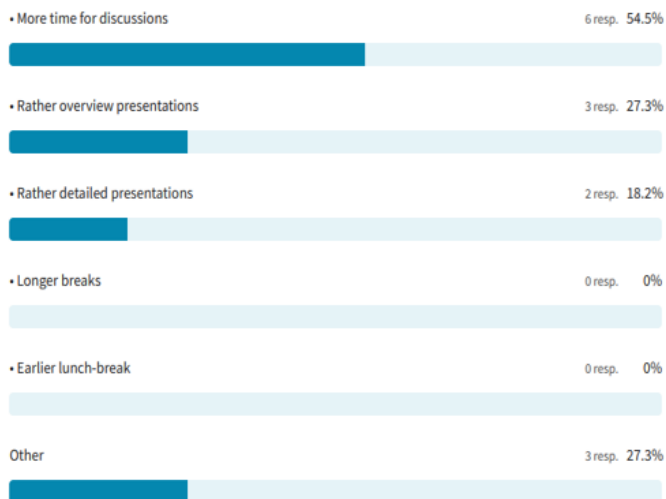
7) Would you prefer to have the next workshop in person or online?

11 out of 11 answered



8) What would you prefer to have for the next workshop?

11 out of 11 answered



6. Next school

The next EIROforum topical workshop will take place in 2024 hosted by European XFEL.

7. Upcoming topical mini-workshops

- Autumn 2022: hardware configuration control at CERN
- Spring 2023 ESI at Eurofusion
- Spring 2024 detector characterisation (organised at CERN?)