



Welcome to ESRIN and Workshop Objectives

Second Workshop on International Coordination for Spaceborne Synthetic Aperture Radar

28 September 2022

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→ THE EUROPEAN SPACE AGENCY

Video on ESRIN security



ESA ESRIN Establishment - Activities



- Earth Observation
- Space transportation
- NEO Coordination Centre
- Disaster Charter Coordination Centre
- Corporate IT
- Communication
- Archives
- ESA Security Office
- Contracts, Personnel
- Site Management

**30-40% of ca.870
personnel on site**

**50.000 visitors
per year (pre-Covid)**



International Coordination for Spaceborne SAR Data Acquisition, Processing and Analysis for Earth Science and Applications



- Original idea proposed by Charles Elachi
- First workshop held on 30 May – 1 June 2018 at Caltech, USA
- Explore the interest in and value of a more coordinated approach among the different organizations flying or planning spaceborne SAR missions to achieve higher value for the science and application user community
- Workshop was attended by 60 scientists and engineers from almost all the agencies/countries flying spaceborne SAR's and from the commercial sector



2018-2022 Activities



Since the 2018 first workshop:

- Session at LPS'19 in Milano (more than 250 attendees)
- Coordination meeting in Milano in May 2019
- Second workshop should have taken place at ESA/ESRIN in May 2020
- Unfortunately, due to COVID-19, it was postponed first to May 2021 then to October 2021, then again to October 2022
- Several meetings of the Organisation Committee to prepare the Second Workshop
- Session at IGARSS'21, LPS'22, today at IGARSS'22
- New date for the Second Workshop: 28-30 Sept. 2022, ESA-ESRIN, Frascati, Italy => TODAY



Workshop Objectives (Key Elements)



- Identify
 - new trends in spaceborne SAR missions
 - areas where coordination of data acquisitions can lead to improved science processing efficiency
 - organizational challenges in achieving coordination among agencies
 - recommendations needed to acquire spatially and temporally dense SAR data sets
- Discuss
 - how to maximize scientific/user exploitation of present and planned SAR missions
 - interest and value in having common test sites for calibration & validation
 - optimized systems approach to the overall constellation of planned and proposed missions
 - the desirability of coordinating future missions and the role of the commercial and New Space sector to achieve future scientific and user objectives
- Develop a roadmap for addressing the above challenges and development areas
- Further promote the international coordination for spaceborne SAR



Working Groups (WG) and Thematic Areas (TA)

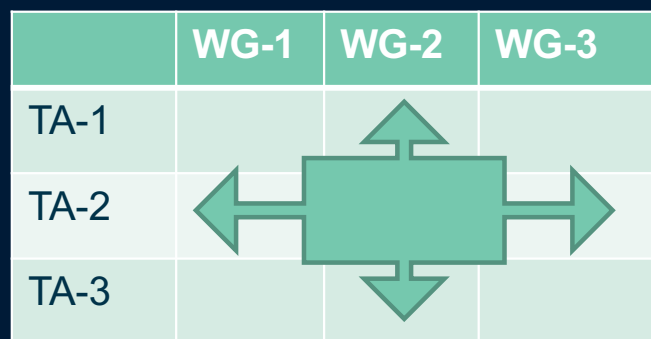


In order to carry on the work started at the 2018 Workshop, **three Working Groups (WG)** that include radar systems experts, users, and scientists from all the involved organizations have started their activities:

- WG-1 Present and future data – Visibility and access (LO-L2) working team
- WG-2 Future imaging systems – Goals, plans, challenges and opportunities working team
- WG-3 Data exploration – Cal/ Val, fusion and assimilation (L3-L4) working team

In the preparation of the Second Workshop, **three thematic areas (TA)** have been added to further deepen the collaboration across the WG topics and cover the following across-domains:

- TA-1: Polarimetric and multi-frequency SAR applications (polarimetric or multi-frequency backscatter intensity and/or polarimetric phase the main measurements. InSAR often useful, but not the main driver).
- TA-2: Interferometric SAR applications (interferometric phase the main measurement). Earth (incl. crustal deformation, volcanoes), Glaciers/Ice Caps, Geo-hazards, and PS.
- TA-3: Programme coordination



Wednesday, 28 September



Transportation info	08:00	Bus leave Frascati Center to ESRIN
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Room Magellan

Session	Start	Duration	Description	Speaker	Organisation
	08:30	00:30	Arrival and registration		
Welcome, objectives, progresses	09:00	00:15	Wel	Maurice Borgeaud	ESA
	09:15	00:15	Over	Charles Elachi	Caltech
Status of Working Groups and Thematic Areas	09:30	00:15	Status of WG-1: Present and Future Data	Shin-Ichi Sobue	JAXA
	09:45	00:15	Status of WG-2: Future imaging systems	Paul Rosen	NASA/JPL
	10:00	00:15	Status of TA1/TA2: PolSAR and InSAR	Bruce Chapman / Heather McNairn	NASA JPL / Agriculture And Agri-food Canada
	10:15	00:15	Status of TA1/TA2: PolSAR and InSAR	Cathleen Jones / Åke Rosenqvist	NASA JPL/JAXA
Keynote addresses	10:30	00:30	Cof		
	11:00	00:30	Future SAR	Eric Rignot	University of California Irvine
	11:30	00:30	Future SAR technologies and mission concepts	Alberto Moreira	DLR
Space agencies SAR activities and future plans, part 1	12:00	00:30	New space for SAR	Darren Muff	Iceye
	12:30	00:20	ESA	Maurice Borgeaud	ESA
Space agencies SAR activities and future plans, part 2	12:50	00:20	NASA	Gerald Bawden	NASA
	13:10	01:10	Lunch break		
Space agencies SAR activities and future plans, part 2	14:20	00:20	JAXA	Shin-Ichi Sobue	JAXA
	14:40	00:20	CSA	Guennadi Kroupnik	CSA
	15:00	00:20	DLR	Elizabeth Nuncio Quiroz	DLR
	15:20	00:20	ASI	Francesco Longo	ASI
Space agencies SAR activities and future plans, part 3	15:40	00:30	Coffee break		
	16:10	00:20	ISRO	Nilesh M. Desai	ISRO
	16:30	00:20	CONAE	Laura Frulla (via webex)	CONAE
	16:50	00:30	Discussions on SAR agencies activities	All	
Social event	17:20	00:10	Gro		
	17:30	01:30	Iceb		
	19:00		End Day 1		

Transportation info	19:15	Bus leaves ESRIN to Frascati Center
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Thursday, 29 September



Transportation info	08:15	Bus leave Frascati Center to ESRIN
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Room Magellan

Session	Start	Duration	Description	Speaker	Organisation	
"Panel discussion: Role of science users in New Space SAR companies "	09:00	00:10	Introduction and presentation of the panel	Gordon Campell	ESA	
	09:10	00:10	Perspectives by Alpha Insights	Scott Larson	Canada	
	09:20		Panel with New Space SAR companies			USA
	09:30				Finland	
	09:40	00:10	Perspectives by Synspecive	Naoto Onodera	Japan	
	09:50	00:30	Panel discussion	Chaired by GordonCampbell		
	10:20		End Panel			

See specific room allocation

Session	Start	Duration	Splinter sessions			
			WG-1	WG-2	WG-3	
Splinter meetings for the Working Groups	10:30	03:00	Present and Future Data	Future imaging systems	Data exploration	
			WG leaders: S. Sobue, G. Kroupnik, P. Potin	WG splinter sessions (3x)		
			Room Forcada	Room Magellan	Room James Cook	
			Dedicated programme for each splinter group			
	10:20		End Panel			
	13:30	01:15	Lunch break			
Splinter meetings for the Thematic Areas Groups	14:45	03:00	TA-1	TA-2	TA-3	
			POLSAR applications	InSAR applications	Program coordination	
			TA leaders: A. Rosenqvist, K. Scipal	TA splinter sessions (3x)		
			Room James Cook	Room Magellan	Room Forcada	
Dedicated programme for each splinter group						
	17:45		End Day 2			

Workshop dinner & transportation info	18:15	00:30	Workshop dinner
	18:45	03:45	
	22:30		



Friday, 30 September



Transportation info	08:15	Bus leave Frascati Center to ESRIN
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Room Magellan

Session	Start	Duration	Description	Speaker	Organisation
Reports by Working Groups	09:00	00:20	WG-1: Present and Future Data	Shin-Ichi Sobue, Guennadi Kroupnik	JAXA, CSA
	09:20	00:20	WG-2: Future imaging systems	Paul Rosen, Manfred Zink	NASA/JPL, DLR
	09:40	00:20	WG-3: Future SAR systems	Bruce Chapman / Heather McNairn	NASA JPL / Agriculture And Agri-food Canada
Reports by Thematic Areas Groups	10:00	00:20	TA-1: POLSAR applications	Åke Rosenqvist	JAXA
	10:20	00:20	TA-2: InSAR applications	Cathleen Jones	NASA/JPL
Reports by Thematic Areas Groups (cont.)	11:00	00:30	Coffee break		
	11:30	00:20	TA-3: Program coordination	Gerald Bawden	NASA/HQ
Discussions, way forward, and closing	11:50	00:20	Overall discussion		
	12:10	00:30	Way forward and Closing	Maurice Borgeaud, Charles Elachi	ESA, CALTECH
	12:40	00:10	Next Steps and Way Forward	Maurice Borgeaud, Charles Elachi	ESA, CALTECH
	12:50	00:30	Way forward and Closing	Simonetta Cheli	ESA
	13:00		End of Day 3		

Transportation info	13:15	Bus leave ESRIN to Frascati Center
	13:15	Bus leave ESRIN to Fiumicino Airport



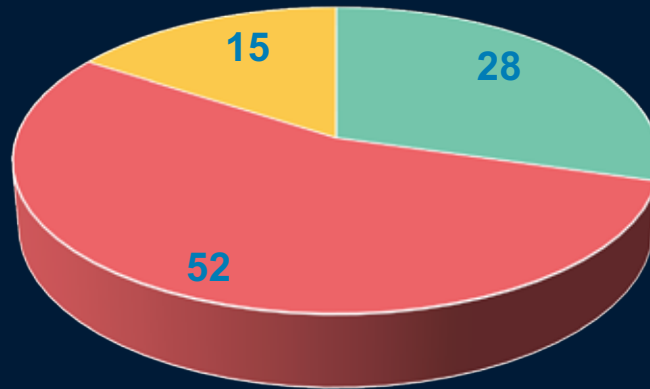
Workshop Participants



- 95 participants (almost all physically present at ESRIN with a few Webex remote connections)

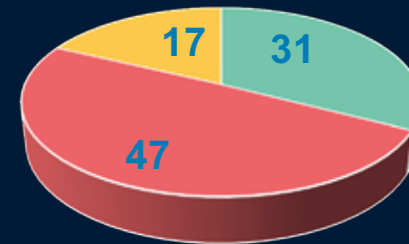
Argentina	2
Canada	7
China	1
Finland	1
France	1
Germany	7
India	4
Israel	2
Italy	28
Japan	8
Netherlands	9
Norway	1
Poland	1
Spain	2
Switzerland	1
United Kingdom	1
USA	19

Participants by continents



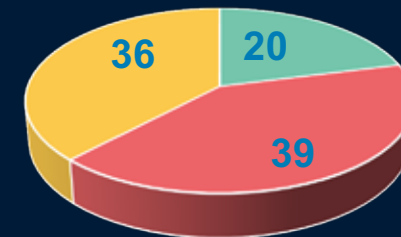
America's Europe Asia

WG Distribution



- WG1: Present and Future Data
- WG2: Future imaging system
- WG3: Data exploration

TA Distribution



- TA-1: POLSAR applications
- TA-2: InSAR applications
- TA-3: Program coordination



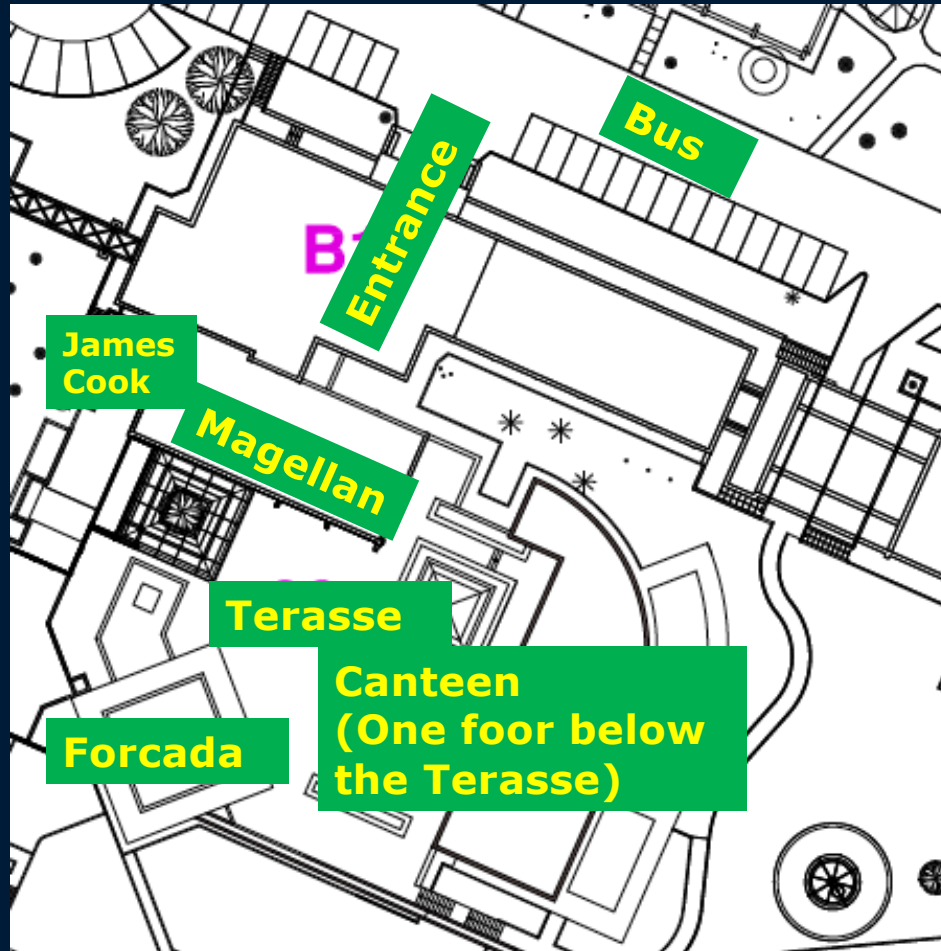
Workshop Logistics



- Today and Friday meetings to take place in this room (Magellan)
- Tomorrow (Thursday)
 - 9-10h30: In Magellan room for the panel session with New Sace companies
 - 10h30-18h00: Splinter meetings in Magellan but also in Forcada and James Cook Rooms (next slide)
 - Your badge indicates the WG/TA you have indicated preference for
- WIFI: connect to “esa-conference” network and insert your credentials received by email
- Lunch served from 13h15 at the ESRIN canteen, one floor below. Cash and CC accepted
- Coffee, tea, and water will be available at the break on the Magellan Terrace (or in the canteen in case of rain)
- Group picture and cocktail tonight at 17h20, on the terrasse (weather allowing!)
- French TV crew present this morning to prepare a special piece for Prof. Eric Rignot
- Visit of the Phi-Experience (ESA EO show room) for the ones interested, 17h30-19h00, small groups of max 20
- Bus services from Frascati to ESRIN in the morning and return in the evening (but for Thu. eve)
- Workshop dinner tomorrow in Grotta Ferrata (10 km from Frascati)
 - Bus service at 18h15 from ESRIN
 - Bus service tomorrow evening at 22h30 to Frascati and Rome
- Bus service to Frascati and FCO airport on Friday at 13h15



ESRIN Maps



COVID-19



- Unfortunately, COVID-19 is still with us!
- In case you informed us on your accommodation details, you should have received at hotel check-in (or at registration) a kit comprised of:
 - 3 FFP2 masks
 - 3 individual Covid-19 self-tests
- In order to make our meeting as safe as possible, you are strongly encouraged to take the provided covid self-tests each morning before attending the workshop
- In case of positive result please do not come on site and contact us for further assistance
- It is not mandatory, but highly recommended to use the masks on site, at least while inside and not speaking
- Please remind that it is compulsory in Italy to wear FFP2 masks on public transportation (train/bus)



Workshop Organising Committee



With Special Thanks to the Organising Committee!

Co-Chairs of the Workshop

- Maurice Borgeaud (ESA)
- Charles Elachi (Caltech)

Organising Committee

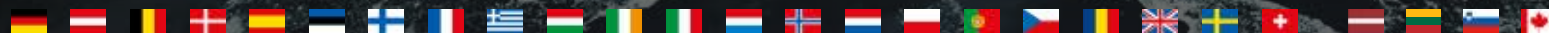
- Maria Battagliere (ASI)
- Gerald Bawden (NASA)
- Shantanu Bhatawdekar (ISRO)
- Gordon Campbell (ESA)
- Bruce Chapman (NASA/JPL)
- Malcolm Davidson (ESA)
- Daniel Delisle (CSA)
- Marcus Engdahl (ESA)
- Laura Frulla (CONAE)
- Cathleen Jones (NASA/JPL)
- Guennadi Kroupnik (CSA)
- Raj Kumar (ISRO)
- Heather McNairn (Agriculture and Agri-Food Canada)
- Alberto Moreira (DLR)
- Giuseppe Ottavianelli (ESA)
- Pierre Potin (ESA)
- Bjorn Rommen (ESA)
- Paul Rosen (NASA/JPL)
- Åke Rosenqvist (JAXA)
- Christiane Schmillius (Jena University)
- Klaus Scipal (ESA)
- Shin-Ichi Sobue (JAXA)
- Martin Suess (ESA)
- Manfred Zink (DLR)



Thank you for your attention!

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