Day 1: Wednesday 23rd November 2022

Bus from Frascati centre (Piazza Marconi) @8:30

Welcome

09:00: Registration and coffee

09:30: ESA Welcome and Intro: Objectives and preliminary plans for 2023-2025, Diego Fernandez

Morning session 1: 4DGreenland final project results

09:45: Surface melt science case, Jan Wuite

10:00: Supraglacial storage science case, Jenny Maddalena

10:15: Subglacial lakes, Louise Sørensen

10:30: Subglacial melt, Nanna Karlsson

10:45: Integrated assessment, *Louise Sørensen*

Coffee: 11:00-11:30

Morning session 2: Greenland continued

11:30: 4DGreenland Scientific Roadmap, Andy Shepherd

11:45: 4DGreenland CCN, Jörg Ebbing

11:50: EO4SMB Final Project Results, Mal McMillan, Martijn Vermeer, Louise Sørensen

12:10: EO4SMB Scientific Roadmap, Mal McMillan

12:30: Discussion on Greenland priorities and next steps, led by Louise Sørensen and Mal McMillan

Lunch 13:00 – 14:00

Afternoon session 1: Arctic Ocean – Sea ice,

14:00: Summer sea ice thickness from CryoSat-2, *Jack Landy* 14:15: Polar+ Snow on Sea Ice Final Project Results: set of presentations on final results, datasets,

science advances and roadmap, P+SSI team

15:00: AKROSS final project results, Mel Sandells

15:15: SIN'XS new project overview, Sara Fleury, Elodie da Silva

Coffee 15:30 – 16:00

Afternoon session 2: Arctic Ocean

16:00-17:30 (1hr 30mins)

14:00-15:30 (1hr 30mins)

16:00: ARKTALAS Final Project Results and Scientific Roadmap, *Johnny Johannessen* 16:20: Arctic+ Salinity CCN, *Carolina Gabarró* 16:35: Cryosphere Virtual Laboratory, *Firik Malnes*

16:35: Cryosphere Virtual Laboratory, Eirik Malnes

16:50: Discussion on Arctic Ocean priorities and next steps, *led by Michel Tsamados, Mel Sandells, & Johnny Johannessen*

17:30: Icebreaker drinks reception

Bus to Frascati centre @18:45

11:30-13:00 (1hr 30mins)

9:45-11:00 (1hr 15mins)

In-person, remote

Day 2: Thursday 24th November 2022

Bus from Frascati centre (Piazza Marconi) @8:45

In-person, remote

Wake up talk	
09:30: Status of new missions & development for Polar science and applications, Craig Donlon	
Morning session 1: 4DAntarctica	9:45-11:00 (1hr 15mins
09:45: 4Dantarctica and Digital Twin Projects overview, Noel Gourmele	n
09:50: Supra-glacial melt, Giovanni Macelloni	
10:00: Supra-glacial melt, <i>Thomas Nagler, Jan Wuite</i>	
10:10: Supra-glacial lakes & ESRIN HPC usage for DTE, Mal McMillan, D	iarmuid Corr, Amber Leeson
10:20: "Lithosphere", Fausto Ferraccioli, Rene Forsberg	
10:30: Ice sheet temperature, <i>Giovanni Macelloni, Catherine Ritz</i>	
10:40: Subglacial lakes, Anna Hogg	
10:45: Subglacial routing, Mauro Werder	
10:50: 4DA and DTE status, Martin Ewart	
Coffee: 11:00-11:30	
Morning session 2: 4DAntarctica continued & DTE Antarctica	11:30-13:00 (1hr 30mins
11:30: MAR Model & EO Assimilation including ESRIN HPC usage, Quen	tin Claude
11:30: MAR Model & EO Assimilation including ESRIN HPC usage, <i>Quen</i> 11:45: Ice-sheet wide basal melting: Amery case study. <i>Martin Wearing</i>	
11:45: Ice-sheet wide basal melting: Amery case study, Martin Wearing	
11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i>	
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 	3
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platform 	3
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 	3
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platform 	orm concept demo, <i>Martin</i>
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> 	orm concept demo, <i>Martin</i>
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> 	orm concept demo, <i>Martin</i>
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> Lunch 13:00 – 14:00 Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and high 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i>
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Mo</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 14:15: Future development of ice shelf basal melt rate product, <i>Noel C</i> 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i> Gourmelen
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 14:15: Future development of ice shelf basal melt rate product, <i>Noel C</i> 14:25: Future development of ice shelf velocity product, with links to provide the state of th	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i> Gourmelen
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Mo</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 14:15: Future development of ice shelf basal melt rate product, <i>Noel C</i> 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i> Gourmelen ESA future missions (ROSE-
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 14:15: Future development of ice shelf basal melt rate product, <i>Noel C</i> 14:25: Future development of ice shelf velocity product, with links to I L, Harmony, S1 NG), <i>Thomas Nagler</i> 14:35: Ice shelf mass balance and freshwater budget, <i>Benjamin Daviso</i> 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i> Gourmelen ESA future missions (ROSE- on
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 14:15: Future development of ice shelf basal melt rate product, <i>Noel C</i> 14:25: Future development of ice shelf velocity product, with links to I L, Harmony, S1 NG), <i>Thomas Nagler</i> 14:45: CryoSat+ Antarctic Ocean Final Project Results: set of presentati 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i> Gourmelen ESA future missions (ROSE- on
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 14:15: Future development of ice shelf basal melt rate product, <i>Noel C</i> 14:25: Future development of ice shelf velocity product, with links to I L, Harmony, S1 NG), <i>Thomas Nagler</i> 14:35: Ice shelf mass balance and freshwater budget, <i>Benjamin Daviso</i> 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i> Gourmelen ESA future missions (ROSE- on
 11:45: Ice-sheet wide basal melting: Amery case study, <i>Martin Wearing</i> 11:55: Active subglacial lakes (4DA + DTE), <i>George Malczyk</i> 12:00: Ice-Subglacial-Ocean Interactions (4DA + DTE), <i>Dan Goldberg</i> 12:15: Ice shelves dynamics, melting and stability – including DTE platfor <i>Wearing, Martin Ewart</i> 12:30: Discussion on Antarctica priorities and next steps, <i>led my Mal Ma</i> <i>Lunch 13:00 – 14:00</i> Afternoon session 1: Ice shelves and ocean interactions 14:00: Polar+ Ice Shelves: Project overview – aims, key datasets and hig Polar+ Ice Shelves Scientific Roadmap Showcase: 14:15: Future development of ice shelf basal melt rate product, <i>Noel C</i> 14:25: Future development of ice shelf velocity product, with links to I L, Harmony, S1 NG), <i>Thomas Nagler</i> 14:45: CryoSat+ Antarctic Ocean Final Project Results: set of presentati 	orm concept demo, <i>Martin</i> cMillan & Noel Gourmelen 14:00-15:30 (1hr 30mins ghlight results, <i>Anna Hogg</i> Gourmelen ESA future missions (ROSE- on

Afternoon session 2: Southern Ocean

16:00: 20 years of Antarctic sea ice volume, Florent Garnier 16:15: SO Ice, Anna Hogg 16:30: SO Fresh, Rafael Catany

20:00: Dinner at Belvedere dal 1933, Frascati.

Day 3: Friday 25th November 2022

Bus from Frascati centre (Piazza Marconi) @8:45

9:30-11:00 (1hr 30mins) **Morning session 1: Continental Cryosphere** 09:30: GLAMBIE, Livia Jakob 09:45: Alpine Glaciers, Frank Paul 10:00: Alpine snow, Thomas Nagler 10:15: EO4PAC, MethEO, High latitude methane and AMPAC, Annett Bartsch 10:30: CryoBioLinks, Kristin Böttcher 10:45: Discussion on priorities and next steps, led by Diego Fernandez Coffee: 11:00-11:30 Morning session 2: Links to EC activities and 2023+ 11:30-13:00 (1hr 30mins) 11:30: Introduction, Nicole Biebow 11:35: OCEAN:ICE, Andrew Meijers 11:40: PROTECT, Gael Durand 11:45: PolarRES, Priscilla Mooney 11:50: CRiceS, Jennie Thomas 11:55: TiPACCs, Petra Langebroek 12:00: ARCOS, Massimo Severo Sernicola 12:05: SIOS, Shridhar Jawak 12:10: Arctic Passion, Jonathan Bamber 12:15: Work plan 2023+ discussion and wrap-up, led by Diego Fernandez Bus @13:10 to Frascati centre

In-person, remote

16:00-17:30 (1hr 30mins)

16:45: ALBATROSS, Mathilde Cancet 17:00: Discussion on Southern Ocean + Ice Shelves priorities and next steps, led by Isobel Lawrence, Anna Hogg & Michel Tsamados 17:30: Drinks reception + Digital Twin Antarctica demo Martin Ewart, Noel Gourmelen, Livia Jakob, Diarmuid Corr 18:45: Bus to Frascati centre Note: last train to Rome @22:36