living planet symposium | BONN 23–27 May 2022

TAKING THE PULSE OF OUR PLANET FROM SPACE

BoostFutureEO early phases:

A smart evolution for the Earth Explorers process – From early preparation towards implementation

(DeepDive Agora Session)

Florence Heliere (ESA) and Vanessa Keuck (ESA)

25.05.2022

BoostFutureEO (early phases) at LPS 2022

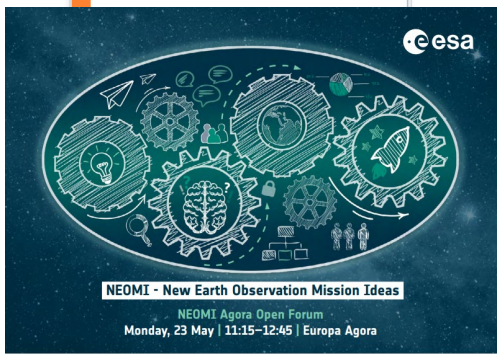
Monday

Agora EUROPA/ESA

NEOMI: are you ready to Boost Future Earth Observation Space Missions?

11:15 am - 12:45 pm
Topic : Open Forum
Form : Agora Oral
Chair(s): Dr. Craig James Donlon (ESA - ESTEC)

Step 2



Wednesday

Agora SAPIENS

BoostFutureEO early phases: A smart evolution for the Earth Explorer – ESA´s world-class science missions for Earth

10:40 am - 11:40 am
Topic : Deep Dive
Form : Agora Oral
Chair(s): Dr. Vanessa Keuck (ESA - ESTEC), Florence HELIERE (ESA - ESTEC)

All steps

Friday

Agora EUROPA/ESA

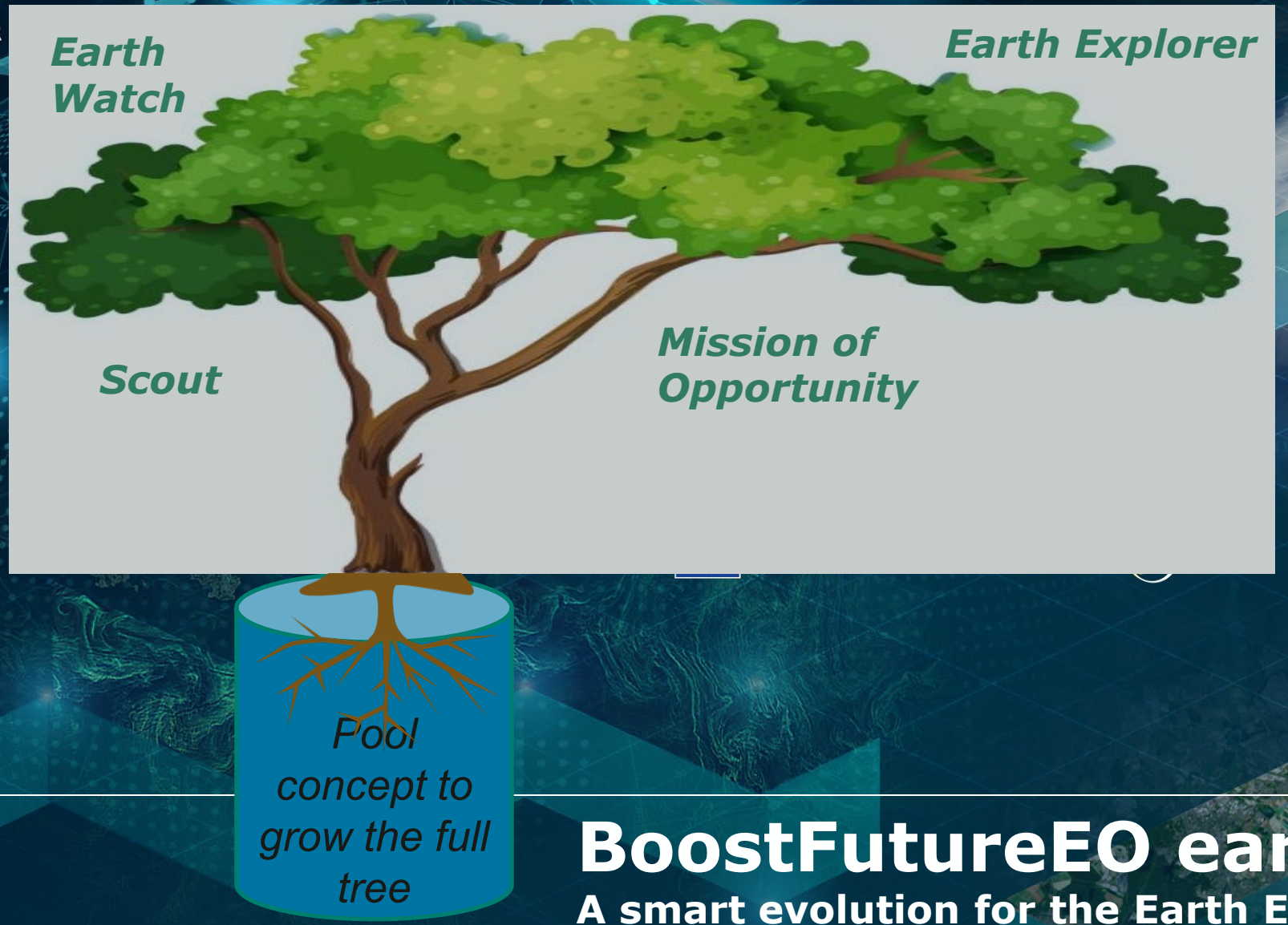
Earth Observation Science Strategy

08:30 am - 10:30 am
Topic : Deep Dive
Form : Agora Oral
Chair(s): Dr. Florence Rabier (ECMWF), Prof. Johnny A. Johannessen (Nansen Environmental and Remote Sensing Center)

Step 1

Step 1
EO Science Strategy Foundation Study Open ITT:
https://esastar-publication.sso.esa.int/ESATenderActions/details/42846

(*1-11373 - EO SCIENCE STRATEGY FOUNDATION STUDY - EXPRO+ Issued - closing date: 15/07/2022 13:00:00.)



Wednesday 25 May

10:40-11:40

Agora SAPIENS

How can we enable ambitious and challenging Earth Explorer missions for the future?

Please come and help us to make it feasible and sustainable

BoostFutureEO early phases:

A smart evolution for the Earth Explorers process – From early preparation towards implementation

Who are we?

Moderators:

Florence Hélière
Future EO Research
Missions Coordinator ESA

Vanessa Keuck
Strategy Coordinator ESA

Panellists:

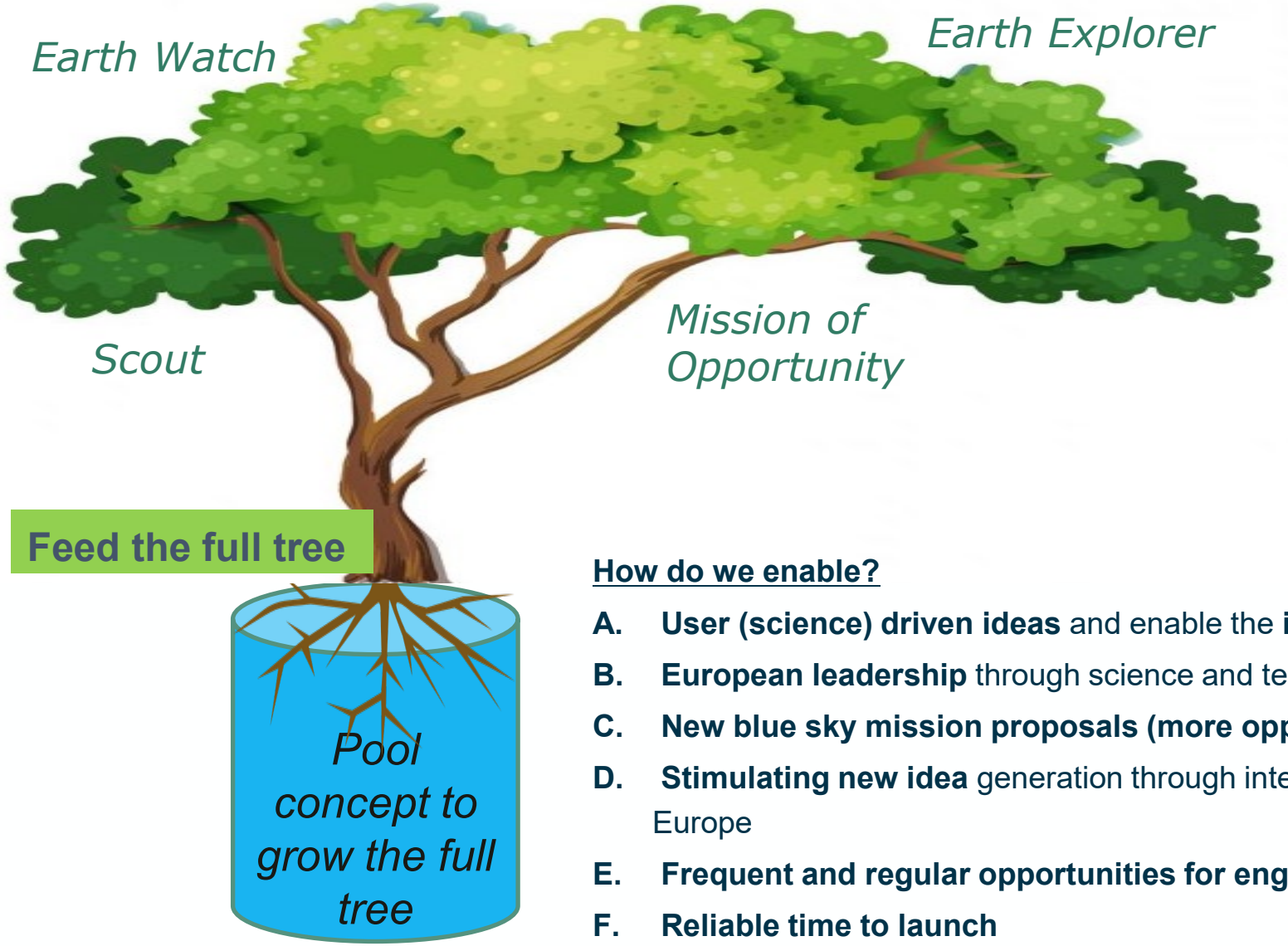
Kathy Whaler
Advisory
Committee EO
Member

Mark Drinkwater
Head of the Earth
and mission science
division ESA

Pierluigi Silvestrin
Senior Advisor of EO
Director ESA

Dominique Gillieron
Earth Explorer
Programme Manager
ESA

How can we enable ambitious and challenging Earth Explorer missions for the future?



Our ambition:

"ESA maintains high levels of scientific excellence and technological innovation by pursuing different classes of missions that must include **large, ambitious and challenging Earth Explorer missions** to secure its position of international leadership in Earth Observation."

(Independent Science Review, 2021)

How do we enable?

A. **User (science) driven ideas** and enable the **implementation of world class Earth science**
B. **European leadership** through science and technological innovation
C. **New blue sky mission proposals (more opportunities)**
D. **Stimulating new idea** generation through international cooperation of scientists and industry across Europe
E. **Frequent and regular opportunities for engagement**
F. **Reliable time to launch**

A possible solution to boost research missions?

BoostFutureEO early phases “Global scenario outline”

Step 1: New approach to a revision of LPC including observational gap analysis

Step 2: New EO Mission Ideas (NEOMI)

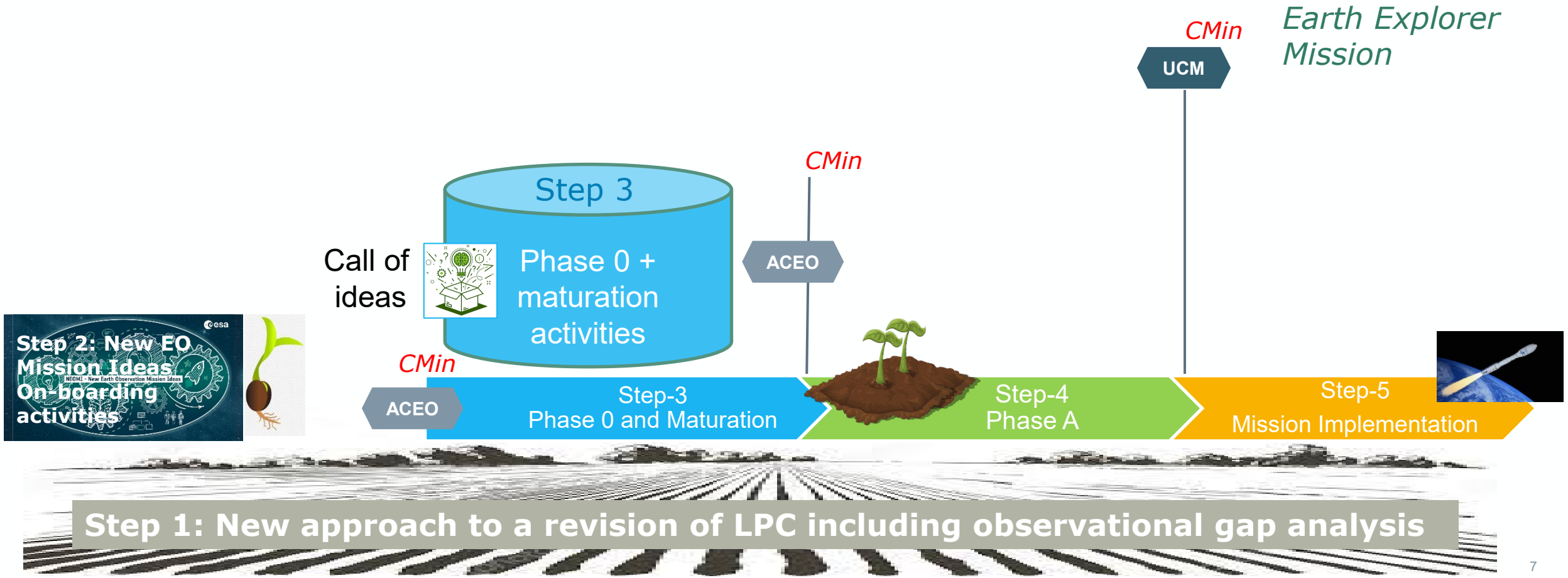
Step 3: Call for ideas followed by Phases 0 and maturation activities for ‘commended’ missions

Step 4: Selection of missions for Phase A and implementation of Phase A

Step 5: Selection of mission for implementation followed by Phase B/C/D/E1

- Contributes to **selection of innovative ideas** based on their **scientific excellence and provides a longer-term perspective**.
- **Supports on-boarding of new missions** (EE, others) through step 1, 2 and maturation of the commended missions.
- **Increase competition among missions ideas**
- **Contributes to minimize risk for mission implementation**

A global scenario to grow future missions…



A global scenario to grow future missions…

Start of a new EE cycle every 3 years (for each CMin)

Earth Explorer Mission

CMin
UCM
ACEO
Step-3
Phase 0 and Maturation

CMin
UCM
ACEO
Step-3
Phase 0 and Maturation
Step-4
Phase A

CMin
ACEO
Step-3
Phase 0 and Maturation
Step-4
Phase A
Step-5
Mission Implementation

Call of ideas

Step 3
Phase 0 + maturation activities

Step 1: New approach to a revision of LPC including observational gap analysis

A global scenario to grow future missions…

Earth watch

Scout

Mission of opportunity

Earth Explorer Mission

Step 3

Call of ideas

Phase 0 + maturation activities

CMin

UCM

ACEO

Step-3 Phase 0 and Maturation

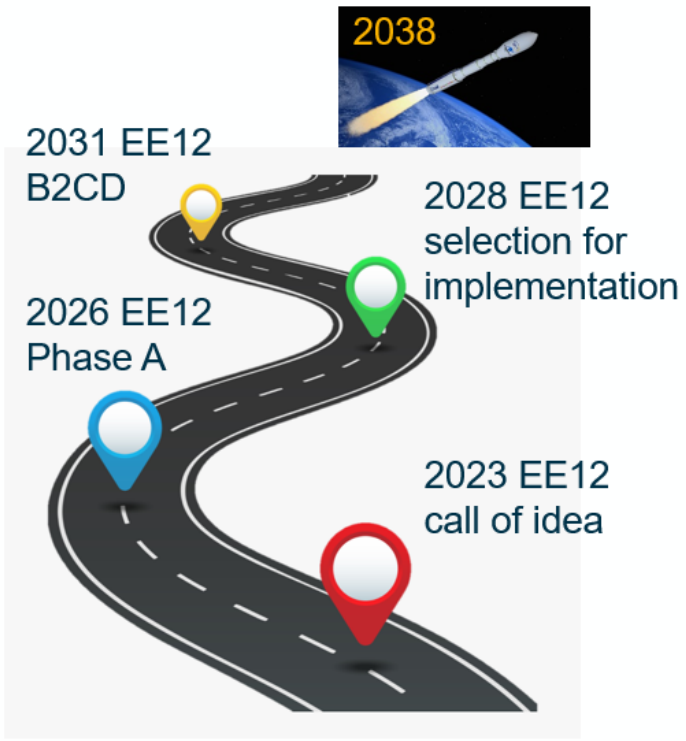
Step-4 Phase A

Step-5 Mission Implementation

Step 1: New approach to a revision of LPC including observational gap analysis

The future – impact on the next generation of Earth Explorers

Earth Explorer 12
Including steps 3,4,5



Earth Explorer 13 +n
ALL BoostFutureEO early phases

	Timeline for decision
Call for idea (entry to Phase 0 step 3)	2025
Entry to Step 4 (Selection of 2 phases A)	2028
Entry to Step 5 (Selection for implementation - phase B1 followed by B2CDE1)	2031

Thanks for your attention

Friday

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