



Agricultural Commodities Webinar

02/07/2020 15:00 CEST

ESA UNCLASSIFIED

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European Space Agency



WELCOME TO THE WEBINAR!

Before we start...

- Please keep your microphones muted during the webinar and make sure your webcam is switched off.
- You can use the conversation function anytime to submit your questions. They will be addressed during the Q&A at the end of the webinar



AGENDA

ESA Welcome and introduction

ESA's *Commodities Kick Start* Competition

Commodities and Space

How to Apply

Questions and Answer Session



space transportation



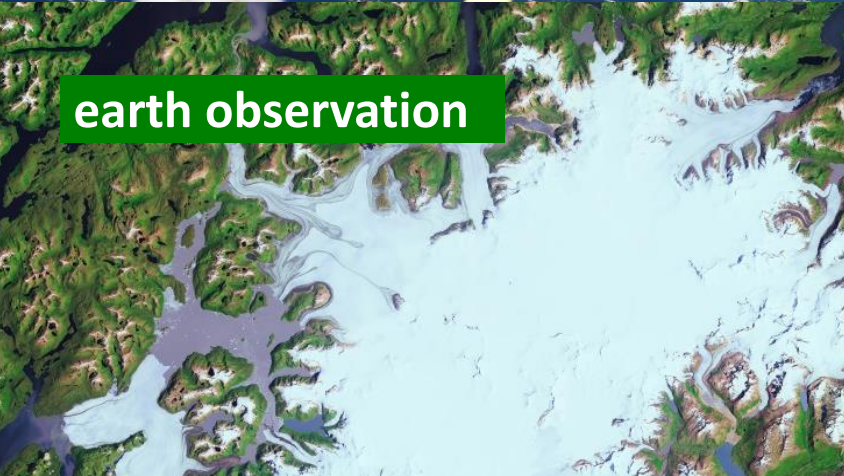
science



human spaceflight



earth observation



**telecommunications
and applications**



navigation



exploration



operations

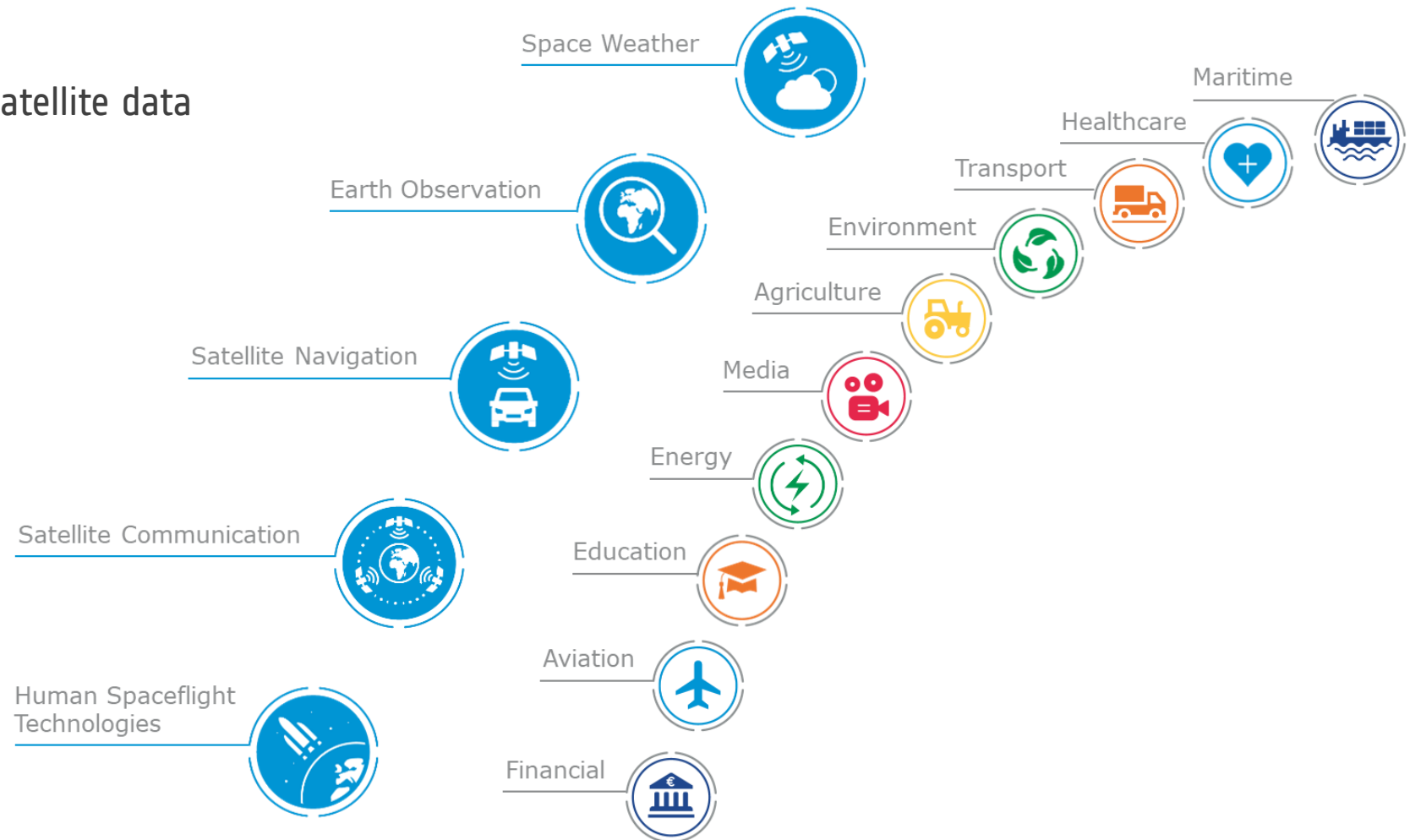


technology



ESA SPACE SOLUTIONS

Could you use space technologies or satellite data for the benefit of life on Earth?





→ ESA SPACE SOLUTIONS OFFERS



Zero-equity funding (from
€50k to €2M+ per activity)



A personalised ESA
consultant



Technical support and
commercial guidance



Tailored project
management support



Access to our international
network of ESA and partners



Access to our network
of investors



Credibility of the
ESA brand



COMMODITIES

ESA's Kick Start Competition



Commodities: An Introduction

Commodity: a basic good, raw material or primary agricultural product

They can generally be divided into three categories:

- i. **Agricultural Commodities**, which include food crops, livestock and industrial crops (like lumber, rubber and wool).
- ii. **Metal Commodities**, which comprise precious metals (e.g., gold, silver, platinum and palladium) and base metals (e.g., aluminium, nickel, steel, iron ore, tin and zinc)
- iii. **Energy Commodities**, which include petroleum products, natural gas, heating oil, coal, uranium (for nuclear energy), ethanol (as a gasoline additive) and electricity.





Commodities Kick Start

Since the topic of commodities is so vast, the “Commodities Kick Start” has been split into three competitions:

Part 1: Agricultural Commodities

Competition opens 06 July 2020 and closes 11 September 2020.

Part 2: Metal Commodities

Competition opens 14 September and closes on 30 October 2020.

Part 3: Energy Commodities

Competition opens 03 November and closes on 18 December 2020.



Part 1: Agricultural Commodities Kick Start

Winners of the competition will run a **6 month study**, called a Kick Start.

During the Kick Start, teams will look at:

1. Engaging with **users**
2. Assessing the **technical** feasibility
3. Developing the **business model** and plan

Kick Start activities typically cost €80K and each winning team will receive:

- 80% funding by ESA up to €64K for SMEs*
- 75% funding by ESA up to €60K for non-SMEs

Visit: <https://business.esa.int/funding/intended-tender/commodities>

*SMEs, or 'Small and Medium enterprises', are defined here: EU recommendation 2003/361.





Agricultural Commodities Introduction

There are six agricultural commodity categories:

1. Cereal grains, used as food for humans and animals, or feedstock for fuels
2. Oilseeds, like cotton, palm oil and soybeans
3. Meat, including live animals like cattle
4. Dairy
5. Soft commodities, like cocoa, coffee, orange juice, and sugar
6. Other agricultural commodities, like rubber and wool with industrial applications.



Agricultural Commodities Background

- Drought and heavy rains can be problematic for agricultural commodities; Recently, a deadly fungus threatened to wipe out rubber trees. New technologies to improve resilience are needed.
- Agriculture is a leading driver of deforestation. Palm oil, soy, beef, cocoa and coffee are especially significant.
- Farmers in remote, rural areas face challenges in getting their food to market safely and efficiently, and achieving a fair price for it. Expensive energy supplies, insufficient storage facilities, poor roads and unsuitable transportation methods mean perishable goods often lose a lot of their value
- From 2000 to 2014, global clothing production doubled. Making and laundering clothes usually requires huge quantities of water and chemicals; fibre farms occupy vast tracts of land; greenhouse-gas emissions are significant.

Fungal disease damaging southern rubber plantations

PUBLISHED : 13 NOV 2019 AT 17:06

WRITER: POST REPORTER



From forests to farms: Cargill tracks commitment to protect the planet

News article - 12 Dec 2018

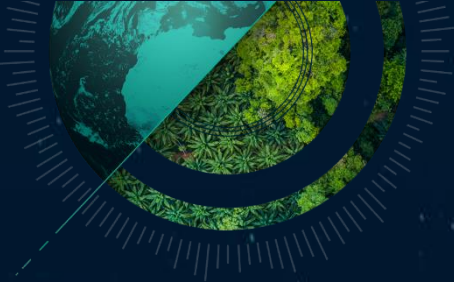


Cargill Cocoa & Chocolate believes that eliminating deforestation in the cocoa supply chain is imperative; not only to protect our planet's natural resources, but also to

An initiative of



The Cocoa & Forests Initiative is an active commitment of top cocoa-producing countries with leading chocolate and cocoa companies to end deforestation and restore forest areas, through no further conversion of any forest land for cocoa production.



Relevant Agricultural Commodity Ideas

1. Applications to help farmers **adjust growing techniques** through precise weather monitoring, predictive analytics, crop monitoring, and detection of pests
2. Applications to monitor **deforestation**, track illegal deforestation, issue deforestation alerts and protect biodiversity
3. Applications to **map farms and identify risks**. GNSS-enabled applications and mapping could help to ensure that commodities are sourced legally from farms outside protected areas, and to identify whether commodities from certain farms are at risk e.g. due to political issues or natural disasters.
4. Applications to **identify provenance** of agricultural commodities. Blockchain and other track and trace systems could help to ensure legitimate agricultural trade of agricultural goods.
5. Applications to **protect, track, and facilitate** the **last-mile delivery** of agricultural commodities.
6. Applications to **predict yield and identify crops**. Satellite applications could provide commodity traders with insight into their agri-commodity investments
7. Applications to **improve sustainability** in fashion, for example by helping clothing companies source and reuse materials, or by developing new systems to reclaim natural fibres (like cotton and silk).
8. And **others!**

VALUE OF SPACE



Earth Observation

- Monitor health of crops, quantity of crops, and crop types.
- Monitor impacts of growing commodities e.g. satellite imagery detecting deforestation
- SatEO data with AI and ML, can provide insight into the agricultural markets (e.g. by observing transportation of goods, activities along points of the supply chain, etc.)
- It could map farms and routes to detect potential risks (e.g. natural hazards) and ensure sites aren't affecting protected areas
- Help farmers forecast yield production; monitor crop development; detect pests and disease; and calculate the correct amount of fertiliser, water or pesticides to use.



Satellite Navigation

- SatNav can be used to monitor the transportation of goods globally. This is especially useful when combined with sensorised shipping containers for track and trace monitoring.
- SatNav can also be used to improve transport routes of commodities and for geo-tagging data e.g. farming sensors
- SatNav can help guide autonomous vehicles and machinery used on farms.



Satellite Communications

- SatCom provides broadband internet, video and reliable communications to harsh, remote, and disaster-struck regions.
- It can be used as a primary communication means or as back-up to terrestrial networks, enhancing robustness and resilience.

Who Can Apply?

- ESA Space Solutions can provide funding for Kick Starts to any company residing in the following 20 Member States: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, and Sweden.
- Please note that, currently, the **United Kingdom** and **Switzerland** are **not** supporting Kick-Start activities.
- If you are considering applying, you must inform your National Delegation to obtain a **letter of authorisation** allowing the funding of the proposed activity.
- Contact details of each **National Delegate** can be found here: <https://artes-apps.esa.int/national-delegations>



How to Apply

1. **Register** by completing online questionnaire on [ESA-STAR Registration](https://esastar-emr.sso.esa.int) - minimum 'light registration': <https://esastar-emr.sso.esa.int>
2. **Download** the official tender **documentation** (Invitation to Tender) via EMITS from 06th July 2020: <http://emits.sso.esa.int/emits/owa/emits.main>
3. **Create** 'Bidder Restricted Area' in ESA-STAR
4. **Write your proposal** and obtain **Letter of Authorization** from [National Delegation](#).
5. **Submit** your proposal via 'Bidder Restricted Area' in [ESA-STAR Tendering](#) by 11 September 2020 at 13:00 CEST (12:00 BST)



How to Apply

The Letter of Invitation to Call for Proposals is issued on EMITS (<http://emits.sso.esa.int/emits/owa/emits.main>) It includes:

- Cover letter
- **Appendix 1:** List of Thematic Calls for Ideas
- **Appendix 2:** Draft Contract
- **Appendix 3:** Tendering Conditions
- **Appendix 4:** Proposal Template





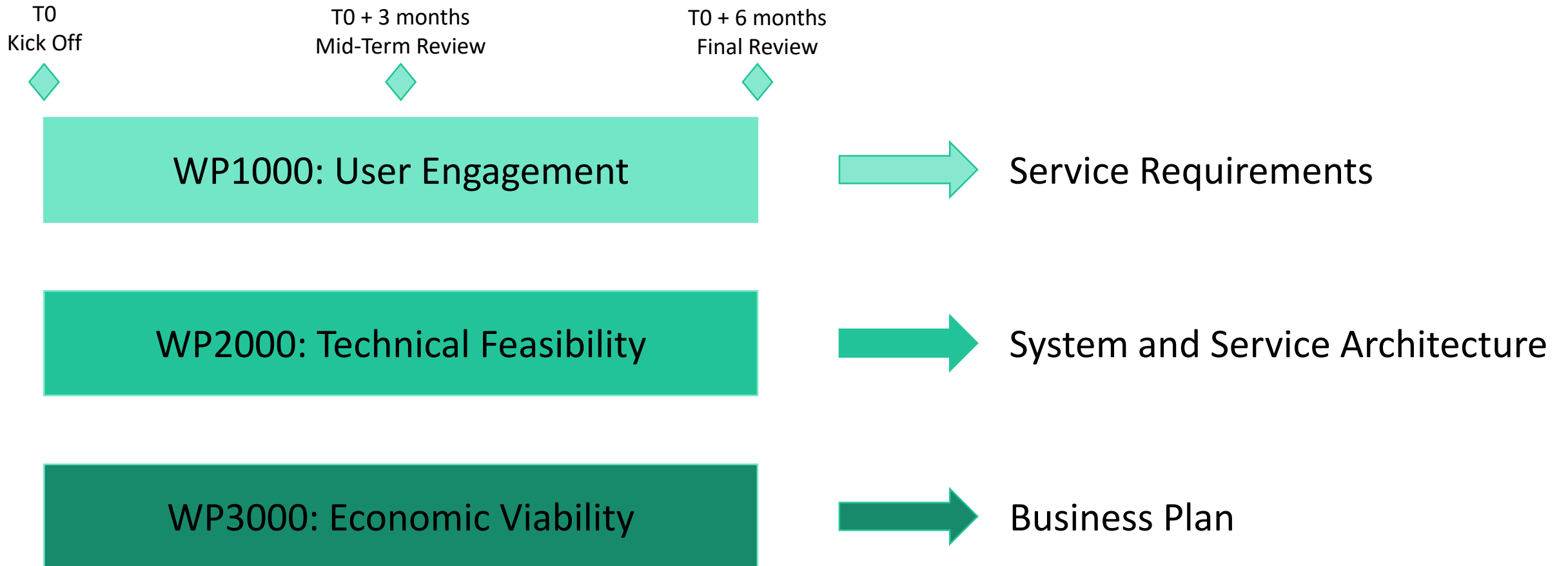
Proposal Template

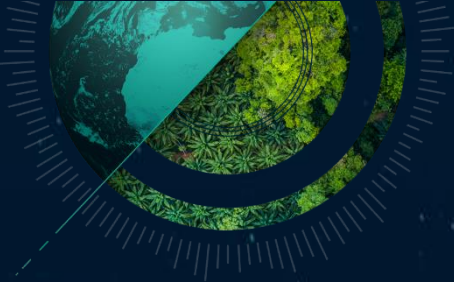
Your Proposal should include the following information:

- 1) Executive Summary (max 1 page)
- 2) Business Potential (max 5 pages)
- 3) Technical Concept (max 5 pages)
- 4) Team and Resources (max 3 pages)
- 5) Management (max 4 pages)
- 6) Financials (max 2 pages)



Kick Start Tasks





Overall Aim

Kick Start

Explore the technical feasibility and commercial viability of a service

Demonstration
Project

Develop the application and pilot the service with end users on board.

Operational
service

Ultimate aim is to have an economically sustainable



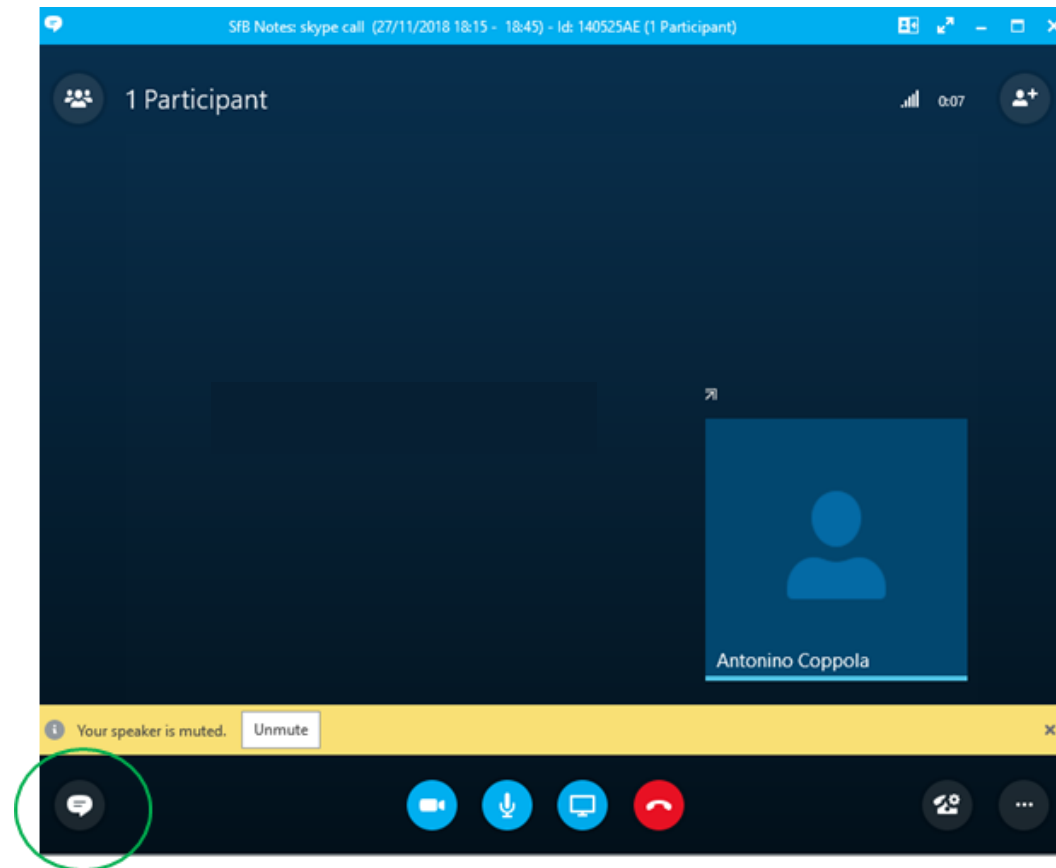
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OPEN QUESTIONS & ANSWER SESSION





Thank you!

