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<tr>
<td>9h00</td>
<td>CONFERENCE INTRODUCTION</td>
<td>Plenary Round Table #1: AGENCIES MID AND LONG TERM POLICIES</td>
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<td>9h20</td>
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<td>Plenary Round Table #2:</td>
<td>PRIMES AND OPERATORS VS SUPPLIERS FOR SPACE TRANSPORTATION and SPACECRAFT</td>
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<td>Chairs: D. RIBEREAU, ArianeGroup, Jamila MANSOURI, ESA</td>
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### KEYNOTE SPEECH #1: Space democratization

Matteo PECCONIERI, AVIO S.p.A., IT

#### PARALLEL SESSIONS

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#### COFFEE BREAK

10:20
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<td>Electric Propulsion 2</td>
<td>Modelling and Simulation 2</td>
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<td>00487 - Innovations in Propulsion within ESA’s Future Launcher Preparatory Programme (FLPP) Advanced Technology</td>
<td>00473 - Overview of aerodynamic thrust vector control for aeropulse nozzles in cold gas experiments</td>
<td>00463 - Investigation of aerodynamic thrust vector control for aeropulse nozzles</td>
<td>00454 - Design of an experimental ablative pulsed plasma thruster for micropropulsion Propellants</td>
<td>00452 - Plasma brake delineation using dynamic space environment</td>
<td>00270 - The Development of Highly Efficient Minimised Proportional Valves Based on Piezoelectric PVT Actuators</td>
<td>00238 - Overview of spacecraft Propulsion Activities in Thales Alenia Space in the UK</td>
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<td>00461 - Overview of the activities promoted by Thialcruss Space Agency in the field of liquid space propulsion</td>
<td>00480 - ACTIVE - Optimization of a fluids thrust vector control on aeropulse nozzles</td>
<td>00422 - Study of Flame Impingement on CubeSat Structure and Solar Array by Different Propellants</td>
<td>00454 - Design of an experimental ablative pulsed plasma thruster for micropropulsion Propellants</td>
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<td>Marco Pizzolli</td>
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<td>00500 - PDFU Ignition system qualification and flight production and successors</td>
<td>00393 - Design and evaluation of aeropulse nozzles for upper stage</td>
<td>00327 - Design, Set Up, and First Ignition of the HK Melon-based Plasma Thruster</td>
<td>00468 - Design of a Hollow Cathode Thruster: Concepts, Parameter Study and Initial Test Results</td>
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**END OF DAY 1**
### DAY 2: March 18th, 2021

**NEW BUSINESS, NEW MARKETS**

#### PLENARY SESSION

Plenary Round Table #3: European Micro Launchers and Space ports

**Chairs:** Thilo KRANZ, ESA, Jérôme BRETEAU, ESA, Ulf PALMNÄS, Palmnäs & Co

**Time:** 10h40 - 12h00

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**Focus:**
- Propulsion
- Fluid systems
- Chemical propulsion
- Electrical propulsion

**Moderators:**
- BOURY, BO, ArianeGroup, FR
- BOUDET, GB, Solway Materials, GB
- SHIMADA, JP, JAXA, JP
- PEUKERT, K, INNOSAT, DE
- Ford, M, DLR, UK
- WALLACE, N, ESA, UK

#### PARALLEL SESSIONS

**COFFEE BREAK**

**Time:** 11h00 - 11h30

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**Focus:**
- Combustion
- Ignition
- Cubesat
- Propulsion
- Simulation

**Moderators:**
- BOUYER, A, ArianeGroup, FR
- GARBAYO, A, AVS, SP
- DUCHEMIN, M, SAFRAN, FR
- SHIMADA, J, JAXA, JP
- PEUKERT, M, DE

#### LUNCH BREAK

**Time:** 12h40 - 13h10

**EXHIBITION AND NETWORKING**

**Time:** 13h30 - 14h00

**LUNCH BREAK**

**Time:** 13h40 - 14h00
KEYNOTE SPEECH #2: Electric Propulsion Activities at ESA
Jose GONZALEZ DEL AMO, ESA

E X H I B I T I O N a n d N E T W O R K I N G

COFFEE BREAK
### Day 2 - Session 2 - 09:20 - 10:05

#### Room 1: Turbopumps - E

- **10:00** - Turbopump Test Article for a Semi-Cryogenic Engine
  - **Presenter:** Alex Chandra
  - **Institution:** The University of Tokyo - IP
  - **Description:** The presentation will detail the design and test of a turbopump for a semi-cryogenic engine.

- **10:15** - Aerodynamics of a High-Speed Hybrid Thruster for Reusable Launch Vehicles
  - **Presenter:** Angela Paus
  - **Institution:** University of Padova - IT
  - **Description:** This talk will focus on the aerodynamic aspects of a high-speed hybrid thruster designed for reusable launch vehicles.

- **10:30** - A Study of the Conjugate Flow of a Cryogenic Liquid in a Rocket Engine
  - **Presenter:** Alejandro Ccade
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** The presentation will explore the conjugate flow behavior of cryogenic liquids in rocket engine components.

- **10:45** - A Study of the Evolution of the Liquid Flow in a Rocket Engine
  - **Presenter:** Dan Irim
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** This talk will analyze the evolution of liquid flow patterns in rocket engine systems.

#### Room 2: Engine/Vehicle Interfaces - F

- **10:00** - Turbopump Test Article for a Semi-Cryogenic Engine
  - **Presenter:** Alex Chandra
  - **Institution:** The University of Tokyo - IP
  - **Description:** The presentation will detail the design and test of a turbopump for a semi-cryogenic engine.

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  - **Presenter:** Dan Irim
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** This talk will analyze the evolution of liquid flow patterns in rocket engine systems.

### Day 2 - Session 3 - 11:00 - 12:30

#### Room 1: Electric Propulsion - G

- **11:00** - Turbopump Test Article for a Semi-Cryogenic Engine
  - **Presenter:** Alex Chandra
  - **Institution:** The University of Tokyo - IP
  - **Description:** The presentation will detail the design and test of a turbopump for a semi-cryogenic engine.

- **11:15** - Aerodynamics of a High-Speed Hybrid Thruster for Reusable Launch Vehicles
  - **Presenter:** Angela Paus
  - **Institution:** University of Padova - IT
  - **Description:** This talk will focus on the aerodynamic aspects of a high-speed hybrid thruster designed for reusable launch vehicles.

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  - **Presenter:** Alejandro Ccade
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** The presentation will explore the conjugate flow behavior of cryogenic liquids in rocket engine components.

- **11:45** - A Study of the Evolution of the Liquid Flow in a Rocket Engine
  - **Presenter:** Dan Irim
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** This talk will analyze the evolution of liquid flow patterns in rocket engine systems.

#### Room 2: New propulsion Concepts - H

- **11:00** - Turbopump Test Article for a Semi-Cryogenic Engine
  - **Presenter:** Alex Chandra
  - **Institution:** The University of Tokyo - IP
  - **Description:** The presentation will detail the design and test of a turbopump for a semi-cryogenic engine.

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  - **Presenter:** Angela Paus
  - **Institution:** University of Padova - IT
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- **11:45** - A Study of the Evolution of the Liquid Flow in a Rocket Engine
  - **Presenter:** Dan Irim
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** This talk will analyze the evolution of liquid flow patterns in rocket engine systems.

### Day 2 - Session 4 - 13:30 - 15:00

#### Room 1: Manufacturing and Processes - I

- **13:30** - Turbopump Test Article for a Semi-Cryogenic Engine
  - **Presenter:** Alex Chandra
  - **Institution:** The University of Tokyo - IP
  - **Description:** The presentation will detail the design and test of a turbopump for a semi-cryogenic engine.

- **13:45** - Aerodynamics of a High-Speed Hybrid Thruster for Reusable Launch Vehicles
  - **Presenter:** Angela Paus
  - **Institution:** University of Padova - IT
  - **Description:** This talk will focus on the aerodynamic aspects of a high-speed hybrid thruster designed for reusable launch vehicles.

- **14:00** - A Study of the Conjugate Flow of a Cryogenic Liquid in a Rocket Engine
  - **Presenter:** Alejandro Ccade
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** The presentation will explore the conjugate flow behavior of cryogenic liquids in rocket engine components.

- **14:15** - A Study of the Evolution of the Liquid Flow in a Rocket Engine
  - **Presenter:** Dan Irim
  - **Institution:** Romanian Research and Development Institute for Gas Turbines - CRSTI - RO
  - **Description:** This talk will analyze the evolution of liquid flow patterns in rocket engine systems.
### Plenary Round Table #4: Green propulsion for space applications between the different demands of old and new mission conditions, cost reduction, and increasing environmental and health regulations

H. CIESEKI, DLR

#### PARALLEL SESSIONS

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#### ROOM BREAK

10:40 - 11:00: LUNCH BREAK

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**KEYNOTE SPEECH #3:**

Lunar ISRU propellant production for in-situ refueling: Operational challenges and implications for space propulsion

Laurent SIBILLE, NASA, USA

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**SESSION BREAK**

11:30 - 12:00: KEYNOTE SPEECH #1:

The development of a new test article for the verification of the propulsion system for the Lunar Gateway: Challenges and opportunities

Dr. Konstantinos JAKODIACIOTIS, ESA

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**SESSION BREAK**

12:00 - 13:00: LUNCH BREAK

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**SESSION BREAK**

13:00 - 13:30: KEYNOTE SPEECH #2:

Increased performance and improved efficiency of rocket engines: The tandem nozzle story

Professor Georges TROJAN, ONERA

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**SESSION BREAK**

13:30 - 14:00: LUNCH BREAK

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**SESSION BREAK**

14:00 - 14:30: KEYNOTE SPEECH #4:

Aerospace engineering in the 21st century: Challenges and opportunities

Dr. Marco ANTONINI, ONERA

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**SESSION BREAK**

14:30 - 15:00: LUNCH BREAK

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**SESSION BREAK**

15:00 - 15:30: KEYNOTE SPEECH #5:

The future of propulsion: A vision for 2050

Professor Konstantinos KIMOTO, ISU
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<table>
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<td>Gérard DINGERTZ</td>
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<td>51</td>
<td>Modeling Thrust chamber</td>
<td>FR Wilhelm</td>
<td>Kathedrale</td>
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<td>Green Propulsion</td>
<td>Olivier DUCHENAY</td>
<td>S-CATIT, Thales Alenia Space, UK</td>
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**KEYNOTE SPEECH #4: Conclusions of the Space Propulsion Conference, 7th Edition**

H. CIEZKL, DLR, A. GARBAYO, AVS UK

**END OF CONFERENCE**