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|       | DAY 1 : March 17th, 2021<br>SPACE DEMOCRATIZATION                                                                                                                |                                                                                                                         |
| 9h00  | PLENARY SESSION                                                                                                                                                  | E<br>X<br>H<br>I<br>B<br>I<br>T<br>I<br>O<br>N<br><br>a<br>n<br>d<br><br>N<br>E<br>T<br>W<br>O<br>R<br>K<br>I<br>N<br>G |
|       | CONFERENCE INTRODUCTION                                                                                                                                          |                                                                                                                         |
| 9h20  | Plenary Round Table #1 :<br>AGENCIES MID AND LONG TERM POLICIES<br>Chair : C. MANFLETTI, ESA                                                                     |                                                                                                                         |
| 10h50 | COFFEE BREAK                                                                                                                                                     |                                                                                                                         |
| 11h10 | Plenary Round Table #2 :<br>PRIMES AND OPERATORS VS SUPPLIERS FOR SPACE TRANSPORTATION and SPACECRAFT<br>Chairs : D. RIBEREAU, ArianeGroup, Jamila MANSOURI, ESA |                                                                                                                         |
| 12:40 | LUNCH BREAK                                                                                                                                                      |                                                                                                                         |

# EXHIBITION and NETWORKING

EXHIBITION  
and  
NETWORKING

| DAY 2 : March 18th, 2021<br>NEW BUSINESS, NEW MARKETS |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                 |
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| PLENARY SESSION                                       |                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                 |
| 9h00                                                  | Plenary Round Table #3 : European Micro Launchers and Space ports<br>Part 1 : Challenges for European Micro launchers,<br>Part 2 : Challenges for European Space ports<br>Chairs : Thilo KRANZ, ESA, Jérôme BRETEAU, ESA, Ulf PALMNÄS, Palmnäs & Co |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                 |
| 10h40                                                 | COFFEE BREAK                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                 |
|                                                       | PARALLEL SESSIONS                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                 |
|                                                       | Room 1                                                                                                                                                                                                                                              | Room 2                                                                                                                                                                                                                                            | Room 3                                                                                                                                                                                                                          | Room 4                                                                                                                                                                                                                                                                                                                                      | Room 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Room 6                                                                                                                                                                                                                                                | Room 7                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                 |
|                                                       | SESSION 15 - ST<br>Engine control                                                                                                                                                                                                                   | SESSION 16 - ST<br>Combustion chamber 1 (stability)                                                                                                                                                                                               | SESSION 17 - SC<br>CubeSat Propulsion Systems 3                                                                                                                                                                                 | SESSION 18 - SC<br>Electric Propulsion 3                                                                                                                                                                                                                                                                                                    | SESSION 19 - SC<br>Modeling and Simulation 3                                                                                                                                                                                                                                                                                                                                                                                                                              | SESSION 20 - SC<br>Fluid Systems 2                                                                                                                                                                                                                    | SESSION 21 - SC<br>Chemical Thrusters 3                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                 |
| CHAIR 1                                               | Gérard ORDONNEAU, ONERA, FR                                                                                                                                                                                                                         | Yann TALAMONI, ArianeGroup, FR                                                                                                                                                                                                                    | Alberto GARBAYO, AVS -UK, UK                                                                                                                                                                                                    | Olivier DUCHEMIN, SAFRAN SEP                                                                                                                                                                                                                                                                                                                | Nicola KUTUFA (ESA)                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Markus PEUKERT, OHB, DE                                                                                                                                                                                                                               | Markus PEUKERT, OHB, DE                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                 |
| CHAIR 2                                               | Mark FORD (ESA)                                                                                                                                                                                                                                     | Carlos MUNOZ (ESA)                                                                                                                                                                                                                                | Armin HERBERT (ESA)                                                                                                                                                                                                             | Neil WALLACE (ESA)                                                                                                                                                                                                                                                                                                                          | TBD                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Luca FERRACINA (ESA)                                                                                                                                                                                                                                  | Kate UNDERHILL (ESA)                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                 |
| 11:00                                                 | 1                                                                                                                                                                                                                                                   | 00236 - VEGA-E Upper Stage Engine Control Unit with closed-loop control for M10 engine<br><br>Emanuele DI SOTTO (1), Nicole SEGALA (1), Marco MAMMARELLA (1), Daniele KAJON (2), Mikhail RUDNYKH (2)<br><br>(1) Gmv-Ad, Espagne, (2) Avio, Italie | 00292 - LUMEN Thrust Chamber - Injector Performance and Stability<br><br>Justin S. HARDI, Wolfgang ARMBRUSTER, Jan MARTIN, Min SON, Jan DEEKEN, Dmitry SUSLOV, Michael OSCHWALD<br><br>German Aerospace Center (dlr), Allemagne | 00312 - A survey on energetic ionic liquid green propellants and investigation of feed and pressurization systems for small satellites high-thrust impulsive propulsion<br><br>Angelo PASINI (1), Ahmed Emadeldin Sayed NOSSEIR (2), Angelo CERVONE (2)<br><br>(1) Universita Di Pisa, Italie, (2) Delft University Of Technology, Pays-Bas | 00109 - REGULUS: integration and testing of an Iodine electric propulsion system<br><br>Mirko MAGAROTTO (1), Marco MANENTE (2), Nicolas BELLOMO (2), Fabio TREZZOLANI (2), Riccardo MANTELLATO (2), Devis PAULON (2), Lorenzo CAPELLINI (2), Marco MINUTE (1), Davide SCALZI (2), Antonio SELMO (2), Alessandro BARBATO (2), Matteo DUZZI (2), Alessandro SCHIAVON (2), Nabil SOUHAIR (3), Alessia GLODER (2), Francesco BARATO (2), Elena TOSON (2), Daniele PAVARIN (1) | 00047 - Use of numerical modelling to assess the influence of the electrostatic configuration on the electric field in an electrospray thruster<br><br>Mobin MALIK, Katharine SMITH, Alistair REVELL<br><br>The University Of Manchester, Royaume-Uni | 00208 - European Electronic Pressure Regulator - Engineering Model Test Results<br><br>Nick SOLWAY, Ian COXHILL, Adam WATTS<br><br>Nammo, Royaume-Uni                                                              | 00523 - Qualification and first flight application of a normally closed valve with Shape Memory Alloy actuator<br><br>Stephan KRAUS (1), Andreas DR. GERNOTH (2), Lukas WERLING (3), Dominic DR. FREUDENMANN (3)<br><br>(1) Arianegroup, Allemagne, (2) Esa Estec, Pays-Bas, (3) Dlr, Allemagne |
|                                                       |                                                                                                                                                                                                                                                     | 11:20                                                                                                                                                                                                                                             | 2                                                                                                                                                                                                                               | 00477 - Electrical Regulating Valve for Rocket Propulsion Systems<br><br>Matthias GÜNTHER<br><br>Arianegroup, Allemagne                                                                                                                                                                                                                     | 00325 - LES simulation for evaluation of acoustic response of subcritical coaxial flame submitted to high-frequency acoustic fields<br><br>Aurélie NICOLE (1), Luc-Henry DOREY (1), Lucien VINGERT (1), Marie THÉRON (2)<br><br>(1) Onera, France, (2) Cnes, France                                                                                                                                                                                                       | 00504 - Study of Plume Impingement on CubeSat Structure and Solar Array by Different Propellants<br><br>Harshit SAINI, Yash BALANI, Sriшти RAWAL, Ramnath NAYAK<br><br>Srm Institute Of Science And Technology, Inde                                  | 00085 - New EPIC findings: Impact of Mission Total Impulse on Technology Selection & Prerequisites for Lifetime Qualification via Analysis<br><br>Birk WOLLENHAUPT, Markus PEUKERT<br><br>Ohb System Ag, Allemagne | 00273 - Simulation-guided engineering of an air-breathing thruster concept<br><br>Adam OBRUSNIK (1), Krystof MIROZEK (1), Tomas DYTRYCH (2), Michal PAJR (2)<br><br>(1) Plasmasolve, Tchèque, république, (2) Spacelab Eu, Tchèque, république                                                  |
| 11:40                                                 | 3                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                 | 00533 - Nonlinear Control of an Expander-Bleed Rocket Engine using Reinforcement Learning<br><br>Kai DRESIA, Günther WAXENEGGER-WILFING, Jan DEEKEN, Michael OSCHWALD<br><br>German Aerospace Center (dlr), Allemagne                                                                                                                       | 00182 - Implementation of an Acoustic Modes Calculation Method for an 25 kN Engine with Comparison to the L75 Engine Results<br><br>Arthur BAHDUR (1), Tiago DE ARAÚJO (2), Leonardo NASCIMENTO (3)<br><br>(1) Centro De Lançamento De Alcântara, Brésil, (2) Instituto Tecnológico De Aeronáutica, Brésil, (3) Instituto De Aeronáutica E Espaço, Brésil                                                                                                                 | 00467 - Serial Production of Space Components for Megaconstellations<br><br>Nils HILDEBRAND, Helge KÜGLER, Heiko DARTSCH, Hans-Peter HARMANN<br><br>Ast Advanced Space Technologies GmbH, Allemagne                                                   | 00203 - Electric propulsion alternatives selection to interplanetary missions<br><br>Olga STARINOVA<br><br>Nanjing University Of Science And Technology, Russie, fédération de                                     | 00585 - Modelling and Optimizing an Electrohydrodynamic Thruster<br><br>Eduardo CALVO<br><br>University of Porto                                                                                                                                                                                |
|                                                       |                                                                                                                                                                                                                                                     | 12:00                                                                                                                                                                                                                                             | 4                                                                                                                                                                                                                               | 00496 - On-Ground and In-Flight evaluation of a Redundant Control Electronics for Variable Thrust Liquid Engine in Soft-Landing mission<br><br>Ravikumar KIRAN, Ramiyer KARTHIK, Harharakrishnan REVATHI<br><br>Indian Space Research Organisation, Inde                                                                                    | 00078 - Numerical characterization of the acoustic damping in a cold flow experiment with coupled cavities<br><br>David MARCHAL (1), Thomas SCHMITT (1), Robin NEZ (2), Philippe SCOUFLAIRE (1), Sébastien DUCRUX (1)<br><br>(1) Laboratoire Em2c, France, (2) Laboratoire Em2c, Cnes, France                                                                                                                                                                             | 00014 - ALGERIA's first developed satellite propulsion system based on green propellant<br><br>Djamel DARFILAL (1), Mohammed KHATIR (2)<br><br>(1) Satellites Development Center Cds, Algérie, (2) Algerian Space Agency Asal, Algérie                | 00353 - Mission-driven selection of the propulsion system for INNOSAT platform<br><br>Simone CIARALLI, Lorenzo BISI, Alain DEMAIRE<br><br>Ohb Sweden, Suède                                                        | 00038 - Estimation of thrust performance from the experimental results of the combustion of magnesium wires in water vapor<br><br>Mariko AKIYAMA, Keita NISHII, Yoshihito MANNAMI, Masaya MUROHARA, Hiroyuki KOIZUMI, Kimiya KOMURASAKI<br><br>The University Of Tokyo, Japon                   |
| 12:20                                                 | 5                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                 | 00229 - Controller Design for Vertical Take off and Landing Demonstrator with Hybrid Rocket Engine<br><br>Donghoon CHAE, Heesang CHAE, Changjin LEE<br><br>konkuk University, Department Of Aerospace, Engineering, Corée, République de                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 00234 - The concept and development status of new green propellant propulsion system named "Pinot-G"<br><br>Naoki MORITA, Yoshiaki MATSUURA<br><br>Ihi Aerospace, Japon                                                                               | 00395 - Electric Thruster Selection Criteria: a System Point of View<br><br>Christophe KOPPEL (1), Gary QUINSAC (2)<br><br>(1) Kopoos Consulting Ind., France, (2) Observatoire De Paris, France                   | 00175 - Answering the challenges for Electrical Capacitance Tomography systems in rocket propulsion tanks<br><br>Philipp BEHRUZI (1), Andrew HUNT (2), Richard FOSTER-TURNER (2)<br><br>(1) Arianegroup, Allemagne, (2) Atout Process Limited, Royaume-Uni                                      |
|                                                       |                                                                                                                                                                                                                                                     | 12:40                                                                                                                                                                                                                                             | LUNCH BREAK                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                 |

EXHIBITION and NETWORKING

# EXHIBITION and NETWORKING

|              |       | Room 1                                                                                                                                                                                               | Room 2                                                                                                                                                                                                                                                                                                                                         | Room 3                                                                                                                                                                                                                                                                                                                                                                  | Room 4                                                                                                                                                                                                                        | Room 5                                                                                                                                                                                                                                                                                       | Room 6                                                                                                                                                                                                                                                                                                                            | Room 7                                                                                                                                                                                                                                                                                                  | E<br>X<br>H<br>I<br>B<br>I<br>T<br>I<br>O<br>N<br><br>a<br>n<br>d<br><br>N<br>E<br>T<br>W<br>O<br>R<br>K<br>I<br>N<br>G |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|              |       | SESSION 29 - ST<br>LRE Turbopumps 2                                                                                                                                                                  | SESSION 30 - ST<br>Engine/Vehicle Interfaces                                                                                                                                                                                                                                                                                                   | SESSION 31 - SC<br>CubeSat Propulsion Systems 5                                                                                                                                                                                                                                                                                                                         | SESSION 32 - SC<br>Electric Propulsion 5                                                                                                                                                                                      | SESSION 33 - SC<br>New propulsion Concepts 2                                                                                                                                                                                                                                                 | SESSION 34 - SC<br>Hybrid Systems 1                                                                                                                                                                                                                                                                                               | SESSION 35 - SC<br>Manufacturing and Processess                                                                                                                                                                                                                                                         |                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| CHAIR 1      |       | Csaba JEGER (ESA)                                                                                                                                                                                    | Marc VALES, Dassault Aviation, FR                                                                                                                                                                                                                                                                                                              | Matthew SMITH (ESA)                                                                                                                                                                                                                                                                                                                                                     | M. COLETTI, Thales Alenia Space, UK                                                                                                                                                                                           | Helmut CIEZKI, DLR, DE                                                                                                                                                                                                                                                                       | Davar FEIJU (ESA)                                                                                                                                                                                                                                                                                                                 | Sébastien BIANCHI, Air Liquide, FR                                                                                                                                                                                                                                                                      |                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| CHAIR 2      |       | TBD                                                                                                                                                                                                  | Chris HUNTER (ESA)                                                                                                                                                                                                                                                                                                                             | TBD                                                                                                                                                                                                                                                                                                                                                                     | Jose GONZALEZ (ESA)                                                                                                                                                                                                           | Mark FORD (ESA)                                                                                                                                                                                                                                                                              | TBD                                                                                                                                                                                                                                                                                                                               | Marco DE ROSA (ESA)                                                                                                                                                                                                                                                                                     |                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 16:40        | 1     | 00417 - Mathematical Modeling of Powerhead Test Article for a Semi-Cryogenic Engine<br><br>Jayan NARAYANAN, Narayan V, Nageswaran G, Biju Kumar K S, Manu VARRIER, Avinash CHANDRA<br><br>Isro, Inde | 00157 - Research on Propellant Slosh Dynamics of a Martian Moon Lander<br><br>Keitaro ANII (1), Takehiro HIMENO (1), Mitsuhsia BABA (2), Toshinori WATANABE (1), Masatsugu OTSUKI (2), Yutaka UMEMURA (2)<br><br>(1) The University Of Tokyo, Japon, (2) Japan Aerospace Exploration Agency, Japon                                             | 00289 - Endurance Test of PETRUS SJ and Presentation of a Flight Model Design<br><br>Christoph MONTAG (1), Georg HERDRICH (1), Kaethe DANNENMAYER (2), Dieter FEYHL (3), Phillip BAUER (3), Jose GONZALEZ DEL AMO (2), Joerg KRUEGER (3)<br><br>(1) Institute Of Space Systems, Allemagne, (2) Esa Estec, Pays-Bas, (3) Arianegroup, Allemagne                          | 00176 - HEMPT electric propulsion status update<br><br>Ernst BOSCH (1), Julien DEGREMONT (2), Stefan WEIS (1), Ralf HEIDEMANN (1), Angelo GENOVESE (1), Alexey LAZURENKO (1)<br><br>(1) Thales, Allemagne, (2) Thales, France | 00198 - Net-shape Technologies for Low-cost Manufacture of Tank Shells and Weld-free COPV Liner<br><br>Ralf BECKER, Stephen KYLE-HENNEY<br><br>Tisics Limited, Royaume-Uni                                                                                                                   | 00013 - Investigation of Next Generation Combined Propulsion Architectures for Electric and Chemical Propulsion<br><br>Howard GRAY, James SADLER, Oscar JENNINGS, Juliet GREGORY<br><br>Airbus Defence And Space, Royaume-Uni                                                                                                     | 00352 - Development and Qualification of an Electric Propulsion Thruster Orientation Mechanism for Electra GEO satellite<br><br>Hans HELLMAN, Vincent GARCIA, Enrique LAMOUREUX, Staffan PERSSON<br><br>Ohb Sweden, Suède                                                                               |                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|              | 17:00 | 2                                                                                                                                                                                                    | 00537 - Development of High Speed Hybrid Bearings for Reusable Pump-Fed Liquid Rocket Engines<br><br>Angelo PASINI (1), Riccardo SIMI (1), Gabriele BROTTINI (1), Alessandro APOLLONIO (1), Luca D' AGOSTINO (1), Marco DE ROSA (2), Marco LEONARDI (2)<br><br>(1) University Of Pisa, Italie, (2) Esa-Estec, Pays-Bas                         | 00361 - Drag analysis of a modern lightweight launch vehicle at high mach numbers<br><br>Ainslie FRENCH, Antonio SCETTINO, Luca ROMANO<br><br>Cira, Italie                                                                                                                                                                                                              | 00272 - Long lifetime solenoid valve for Electric Propulsion Systems<br><br>Bohdan YURKOV, Olexandr PETRENKO, Dmytro VORONOVSKYI, Andriy TROIAN, Stanislav TOLOK<br><br>Space Electric Thruster Systems, Ukraine              | 00192 - Design and preliminary results of a circular waveguide coupled Electron Cyclotron Resonance Thruster<br><br>Marco Riccardo INCHINGOLO, Mario MERINO, Jaume NAVARRO-CAVALLÉ, Eduardo AHEDO<br><br>Ep2-Uc3m, Espagne                                                                   | 00513 - Observation of electron detachment in a magnetic nozzle<br><br>Shadrach HEPNER, Benjamin JORNS<br><br>University Of Michigan, États-Unis                                                                                                                                                                                  | 00283 - Hybrid Propulsion System for Deep Space CubeSat mission<br><br>Fredrik PERSSON (1), Dhananjay BARBADE (1), Maria SMIRNOVA (2), Aloha MINGO (2), Erik MACHE (3)<br><br>(1) Gomspace Sweden, Suède, (2) Ims Space Consultancy Gmbh, Allemagne, (3) Advanced Space Power Equipment Gmbh, Allemagne |                                                                                                                         | 00224 - Magnetic Field Enhancement of the Quad Confinement Thruster (QCT): Design and Early Development of the QCT Phoenix<br><br>Emmanuelle ROSATI AZEVEDO, Vlad-George TIRILA, Alexander SCHWERTHEIM, Aaron KNOLL<br><br>Imperial College London, Royaume-Uni                                                                                                                                                                                                         |
|              |       | 17:20                                                                                                                                                                                                | 3                                                                                                                                                                                                                                                                                                                                              | 00569 - Contributions regarding the gas dynamics of a turbine with partial admission<br><br>Alexandru CANCESCU (1), Virgil STANCIU (1), Valeriu DRAGAN (2), Dan IFRIM (2), Theodora ANDREESCU (2), Simona-Nicoleta DANESCU (2)<br><br>(1) Politehnica University Of Bucharest, Roumanie, (2) Romanian Research &development Institute For Gas Turbines Comoti, Roumanie | 00557 - Modern Techniques and Technologies for Space Flight Vehicle Engineering<br><br>Guillermo ORTEGA<br><br>Esa, États-Unis                                                                                                | 00479 - Optimization of a Low-Power Electron Cyclotron Resonance Thruster Using Pulsed Waveforms<br><br>Benjamin WACHS, Benjamin JORNS<br><br>University Of Michigan, États-Unis                                                                                                             | 00326 - Status of the On-Going Qualification Life Test of the PPS"5000 Hall Thruster Unit<br><br>Olivier DUCHEMIN (1), Julien RABIN (1), Giovanni CODUTI (1), David LE MEHAUTÉ (1), Vanessa VIAL (1), Xavier CAVELAN (1), Valtua LEROI (2)<br><br>(1) Safran, Space Electric Propulsion Directorate, France, (2) Cnes, France     | 00104 - Thrust Measurements and Evaluation of Asymmetric Infrared Laser Resonators for Space Propulsion<br><br>Oliver NEUNZIG (1), Marcel WEIKERT (1), Martin TAJMAR (2)<br><br>(1) Phd Candidate, Allemagne, (2) Professor, Director Of Institute, Head Of Space Systems Chair, Allemagne              |                                                                                                                         | 00541 - Common Propellant Hybrid Propulsion System Architecture using Applied-Field Magnetoplasmadynamic Thrusters<br><br>Marcus COLLIER-WRIGHT (1), Manuel LA ROSA BETANCOURT (1), David HINDLEY (1), Nantwin KUHN (1), Georg HERDRICH (2), Alexander BEHNKE (2), James FLYNN (3)<br><br>(1) Neutron Star Systems, Allemagne, (2) Insitute Of Space Systems, University Of Stuttgart, Allemagne, (3) Northrop Grumman Corporation, États-Unis                          |
| 17:40        | 4     |                                                                                                                                                                                                      | 00552 - Versatile water test bench for launchers liquid engines turbo-pumps and fluids management devices<br><br>Dan IFRIM (1), Theodora ANDREESCU (1), Simona DANESCU (1), Constantin CALINOIU (2), Alexandru CANCESCU (1)<br><br>(1) Comoti, Roumanie, (2) University Politehnica Bucharest, Roumanie                                        | 00584 - Rocket Engine Digital Twin – Modeling and Simulation Benefits<br><br>David JIMENEZ MENA<br><br>Siemens Digital Industry Software                                                                                                                                                                                                                                | 00112 - MEMS thruster based 6DoF propulsion system for CubeSats<br><br>Umut CINDEMIR, Johan SUNDQVIST, Malte GRUBER, Shreyas CHANDRASHEKAR, Anders MÖRTSELL, Tor-Arne GRÖNLAND<br><br>Gomspace Sweden, Suède                  | 00521 - Development activities on the Engineering Qualification Model of SITAEL's 5kW-class Hall thruster unit<br><br>Tommaso ANDREUSSI, Vittorio GIANNETTI, Alena KITAEVA, Maryam REZA, Eugenio FERRATO, Farbod FARAJI, Antonio PIRAGINO, Mariano ANDRENUCCI<br><br>Sitael S.p.a., Italie   | 00308 - Plasma Acceleration by Electromagnetic Nozzle for an Inertial Electrostatic Confinement Cathode: Development and Characterization<br><br>Yung-An CHAN (1), Masafumi EDAMOTO (2), Francesco ROMANO (1), Georg HERDRICH (1), Naoji YAMAMOTO (2)<br><br>(1) University Of Stuttgart, Allemagne, (2) Kyushu University, Japon | 00024 - Comparison of green and conventional rocket propellants: system analysis tool for in-space propulsion<br><br>Lukas WERLING, Maria DE ALMEIDA FANCARIA, Michele NEGRI, Felix LAUCK, Marius WILHELM, Helmut CIEZKI, Stefan SCHLECHTRIEM<br><br>German Aerospace Center (dlr), Allemagne           |                                                                                                                         | 00491 - High Temperature Superconductor based propulsion and power system architectures as enablers for high power missions<br><br>Marcus COLLIER-WRIGHT (1), Manuel LA ROSA BETANCOURT (1), David HINDLEY (1), Nantwin KUHN (1), Ryan O' REGAN (1), Georg HERDRICH (2), Alexander BEHNKE (2), Markus BAUER (3)<br><br>(1) Neutron Star Systems, Allemagne, (2) Institute Of Space Systems, University Of Stuttgart, Allemagne, (3) Theva Dünnschichttechnik, Allemagne |
|              | 18:00 | 5                                                                                                                                                                                                    | 00580 - Development of turbines nitrogen feed systems for liquid rocket engines turbo-pumps test benches<br><br>Dan IFRIM (1), Theodora ANDREESCU (1), Simona DANESCU (1), Alexandru CANCESCU (1), Constantin CALINOIU (2)<br><br>(1) Romanian R&d Institute For Gas Turbines Comoti, Roumanie, (2) University Politehnica Bucharest, Roumanie | 00169 - The Evolution of the Liquid Cores in Flash Boiling Liquid Nitrogen Sprays<br><br>Andreas REES, Heiko SALZMANN, Joachim SENDER, Michael OSCHWALD<br><br>Dir, Allemagne                                                                                                                                                                                           | 00285 - Development of an Innovative Chemical Propulsion Subsystem for 12U Earth Observation and Telecommunication Missions<br><br>Marcos PEREZ, Michel POUCET<br><br>Lift Me Off, Royaume-Uni                                | 00044 - Spectral radiance measurements of SPT140 thrusters<br><br>Véronique PERRIN BAILLY (1), Andrea SITA (2), Antoine IFELY (1), Yordanka DANCHEVA (3), Fabrizio SCORTECCI (3)<br><br>(1) Thales Alenia Space, France, (2) Thales Alenia Space, Italie, (3) Aerospazio Technologie, Italie | 00012 - Lunar Mission Tanks Using Surface Tension Propellant Management Devices for Propellant Acquisition and Supply<br><br>Don JAEKLE (1), Walter TAM (2)<br><br>(1) Pmd Technology, États-Unis, (2) Northrop Grumman Space Systems, États-Unis                                                                                 | 00278 - The SpaceDrive Project - Conclusion of Mach-Effect-Thruster Experiments on High-Precision Balances in Vacuum<br><br>Maxime MONETTE, Matthias KÖBLING, Oliver NEUNZIG, Martin TAJMAR<br><br>Technische Universität Dresden, Allemagne                                                            |                                                                                                                         | 00268 - The SpaceDrive-Project – Latest Thrust Measurements of the EMDrive with Advanced Testing Facilities<br><br>Marcel WEIKERT, Maxime MONETTE, Matthias KÖBLING, Oliver NEUNZIG, Martin TAJMAR<br><br>Technische Universität Dresden, Allemagne                                                                                                                                                                                                                     |
| 18:20        |       |                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                         |                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| END OF DAY 2 |       |                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                         |                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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|         |   | DAY 3 : March 19th, 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |   | ENVIRONMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |   | PLENARY SESSION                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 9h00    |   | 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. CIEZKI, DLR                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10h40   |   | COFFEE BREAK                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |   | PARALLEL SESSIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |   | Room 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Room 2                                                                                                                                                                                                                                                                                                                        | Room 3                                                                                                                                                                                                                                                                                                                                                | Room 4                                                                                                                                                                                                                                                                                                                    | Room 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Room 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|         |   | SESSION 36 - ST                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SESSION 37 - ST                                                                                                                                                                                                                                                                                                               | SESSION 38 - SC                                                                                                                                                                                                                                                                                                                                       | SESSION 39 - SC                                                                                                                                                                                                                                                                                                           | SESSION 40 - SC                                                                                                                                                                                                                                                                                                                                                                                                                                                         | SESSION 41 - SC                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |   | Green & Hybrid Propulsion 1                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LOX Methane combustion chamber                                                                                                                                                                                                                                                                                                | Green Propulsion 1                                                                                                                                                                                                                                                                                                                                    | Cold Gas Thrusters                                                                                                                                                                                                                                                                                                        | Propellants 1                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Electric Propulsion 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CHAIR 1 |   | Jérôme ANTHOINE, ONERA, FR                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Gilles VIGIER ,3AF,FR                                                                                                                                                                                                                                                                                                         | Helmut CIEZKI, DLR, DE                                                                                                                                                                                                                                                                                                                                | Sébastien BIANCHI, Air Liquide, FR                                                                                                                                                                                                                                                                                        | Sébastien BIANCHI, Air Liquide, FR                                                                                                                                                                                                                                                                                                                                                                                                                                      | George SCHMIDT, NASA, US                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| CHAIR 2 |   | David PERIGO (ESA)                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Marco DE ROSA (ESA)                                                                                                                                                                                                                                                                                                           | W. DINGERTZ, Bradford Ecaps                                                                                                                                                                                                                                                                                                                           | Rogier SCHONNENBORG (ESA)                                                                                                                                                                                                                                                                                                 | Stephan SCHUSTER (ESA)                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Kathe DANNEMEYER (ESA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 11:00   | 1 | 00058 - Development of Hybrid-Hybrid Rocket Propulsion Technology and Its Prospect in Space Exploration<br><br>Jong-Shinn WU, S.-S. WEI, M.-C. LI, Y.-C. CHENG, T. Z. CHOU, G.-R. LAI<br><br>Mechanical Engineering Dept., National Chiao Tung University, Taiwan                                                                                                                                                                                                           | 00048 - LUMEN Thrust Chamber - flame anchoring for shear coaxial injectors<br><br>Michael BÖRNER, Jan MARTIN, Justin HARDI, Dmitry SUSLOV, Jan DEEKEN, Michael OSCHWALD<br><br>Dlr Institute Of Space Propulsion, Allemagne                                                                                                   | 00311 - Modular impulsive green monopropellant propulsion system (MIMPS-G)<br><br>Ahmed Emadeldin Sayed NOSSEIR (1), Angelo CERVONE (1), Angelo PASINI (2)<br><br>(1) Delft University Of Technology, Pays-Bas, (2) Universita Di Pisa, Italie                                                                                                        | 00089 - Development of cold gas propulsion system for a Portuguese EO & maritime surveillance satellite<br><br>Filipa LOURENÇO (1), Paulo GORDO (1), Edgar CARROLO (1), Renato SALLES (1), Nuno FERNANDES (2)<br><br>(1) Omnidea, Portugal, (2) Omnidea-Rtg, Allemagne                                                    | 00017 - Using of Iodine as Propellant in Electric Thrusters<br><br>Konstantinos KATSONIS, Chloe BERENGUER<br><br>Dedalos Ltd, Grèce                                                                                                                                                                                                                                                                                                                                     | 00302 - Electron parameters and ion current measurements in the plasma plume of a high power dual-mode Hall thruster<br><br>Stéphane MAZOUFFRE<br><br>Cnrs-Icare, France                                                                                                                                                                                                                                                                                                                   |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 11:20   | 2 | 00363 - Overview of the development of a H2O2 based chemical attitude control system for VEGA-C<br><br>Bastien HAEMMERLI (1), Daniel DIGRE (1), Timothy JØRAHOLMEN (1), Rasmus LILLEKVELLAND (1), Hege SOLERØD (1), Turi VALLE (1), Jim WHITE (2), Eoin MCGUINNESS (2), Brian LARKIN (2), Lucio TORRE (3), Giuseppe FILOMENO (3), Francesco DI MATTEO (4)<br><br>(1) Nammo Raufoss As, Norvège, (2) Nammo Ireland Limited, Irlande, (3) Avio, Italie, (4) Esa-Esrin, Italie | 00068 - LUMEN – Design of the Regenerative Cooling System for an Expander Bleed Cycle Engine using Methane<br><br>Jan HAEMISCH, Dmitry SUSLOV, Michael OSCHWALD<br><br>Institute Of Space Propulsion, Allemagne                                                                                                               | 00532 - Ground and flight tests of ALSAT 1B electrothermal butane propulsion system<br><br>Djamel DARFILAL<br><br>Satellites Engineering Department, Satellites Development Center Cds, Algérie                                                                                                                                                       | 00257 - Direct Thrust Measurements of an Iodine Cold Gas Propulsion System<br><br>Javier MARTÍNEZ MARTÍNEZ, Elena ZORZOLI ROSSI, Dmytro RAFALSKYI, Stanislav DUDIN<br><br>Thrustme, France                                                                                                                                | 00119 - Performance and Behaviour of Unconventional Molecular Propellants in a Cylindrical Hall Thruster<br><br>Rachel MOLONEY (1), Andrea LUCCA FABRIS (1), Robert C. T. SLADE (2), Vasileios KATRANIDIS (2), Howard GRAY (3), Jim SADLER (3), Oscar JENNINGS (3), Vittorio GIANNETTI (3)<br><br>(1) Surrey Space Centre, University Of Surrey, Royaume-Uni, (2) Department Of Chemistry, University Of Surrey, Royaume-Uni, (3) Airbus Defence And Space, Royaume-Uni | 00056 - Development Status of the ST-40 Hall Thruster<br><br>Danylo SHCHERBAK, Olexandr PETRENKO, Stanislav TOLOK, Anatoliy PEREPECHKIN<br><br>Space Electric Thruster Systems, Ukraine                                                                                                                                                                                                                                                                                                    |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 11:40   | 3 | 00373 - Hydrogen Peroxide RCS on a sounding rocket - a milestone towards launch vehicles and satellite platforms applications.<br><br>Tomasz NOGA<br><br>Lukasiewicz Research Network-Institute Of Aviation, Pologne                                                                                                                                                                                                                                                        | 00088 - Development of a 25 kN Oxygen-Methane Test Chamber<br><br>Horácio MOREIRA, Diogo TORRÃO, João SANTOS, Tiago MOREIRA, Renato SALLES, Filipa LOURENÇO, Tiago PARDAL<br><br>Omnidea Lda., Portugal                                                                                                                       | 00381 - Development of Hydrogen Peroxide based Monopropellant Thruster<br><br>Narendar KUMAR, Ram SN, Nagaraj K, Shambayya K, Venkatesh HS<br><br>Liquid Propulsion Systems Centre, Indian Space Research Organisation, Inde                                                                                                                          | 00455 - Proba-2 Cool Gas Generator Experiment: 10 years in orbit, experiences and lessons learned<br><br>Berry SANDERS (1), Armanda HOGEDOORN (1), Patrick VAN PUT (2)<br><br>(1) Hdes Service & Engineering Bv, Pays-Bas, (2) Bradford, Pays-Bas                                                                         | 00061 - The investigation of alternative solid propellants in Hall Effect Thrusters<br><br>Vlad-George TIRILA (1), Charlie RYAN (1), Alain DEMAIRE (2)<br><br>(1) University Of Southampton, Royaume-Uni, (2) Ohb Sweden Ab, Suède                                                                                                                                                                                                                                      | 00090 - Design and preliminary study of a 200W Cylindrical Hall Thruster<br><br>Tatiana PERROTIN, Pablo FAJARDO, Eduardo AHEDO<br><br>Bioengineering And Aerospace Engineering Dpt, Universidad Carlos III De Madrid, Espagne                                                                                                                                                                                                                                                              |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 12:00   | 4 | 00485 - Design of a Hovering Sounding Rocket Stage for Measurements in the High Atmosphere<br><br>Karl Wieland NAUMANN (1), Oliver DRESCHER (2)<br><br>(1) Bayern-Chemie Gmbh, Allemagne, (2) Dlr, Mobile Raketenbasis, Allemagne                                                                                                                                                                                                                                           | 00160 - HYPROB-NEW: recent developments of the LOX/LCH4 research line<br><br>Francesco BATTISTA, Daniele RICCI, Pasquale NATALE, Daniele CARDILLO, Manrico FRAGIACOMO, Michele FERRAIUOLO<br><br>Italian Aerospace Research Centre, Italie                                                                                    | 00413 - Development of Catalyst for HAN based Monopropellant Thruster<br><br>Savitry KUMARI, Richa PATHAK, Vidhya KARTHIKEYAN, Pratyush PSB, Narayan R, Shambayya K, Paulmony C, Karthikeyan C, Venkatesh H S<br><br>Lpsc,jsro, Inde                                                                                                                  | 00087 - (X)MET: DESIGN AND TEST OF MICROWAVE ELECTROTHERMAL THRUSTERS WITH ARGON and XENON<br><br>Daniel STAAB (1), Eneko LEKUONA (1), Sam REEVE (1), Emily LONGHI (1), Kyaw SWAR (1), Alberto GARBAYO (1), Charlie RYAN (2)<br><br>(1) Avs Uk, Royaume-Uni, (2) University Of Southampton, Royaume-Uni                   | 00118 - Alternative Propellants for Gridded Ion Engines: Performance Analysis of different types of thrusters<br><br>Nazareno FAZIO, Steve B. GABRIEL, I. O. GOLOSNOY<br><br>University Of Southampton, Royaume-Uni                                                                                                                                                                                                                                                     | 00264 - Experimental characterisation of the novel Halo plasma thruster for small satellite applications<br><br>Silvia MASILLO (1), Andrea LUCCA FABRIS (1), Burak KARADAG (2), Aaron KNOLL (3), Thomas POTTERTON (4), Paolo BIANCO (5)<br><br>(1) Surrey Space Centre (ssc), University Of Surrey, Royaume-Uni, (2) University Of Samsun, Turquie, (3) Imperial College London, Royaume-Uni, (4) Surrey Satellite Technology Ltd., Royaume-Uni, (5) Airbus Defence And Space, Royaume-Uni |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 12:20   | 5 | 00499 - Preliminary assessments for the development of a green storable bipropellant rocket engine based on H2O2<br><br>Stefania CARLOTTI (1), Filippo MAGGI (1), Valerio GAIONI (2), Luciano GALTETTI (1)<br><br>(1) Politecnico Di Milano, Italie, (2) Numericae, Italie                                                                                                                                                                                                  | 00238 - Investigation of Laser Ignition Systems in LOX/Methane Thrust Chambers<br><br>Sebastian SOLLER (1), Nico RACKEMANN (1), Roland KAESS (1), Gerhard KROUPA (2), Michael BOERNER (3)<br><br>(1) Arianegroup Gmbh, Allemagne, (2) Silicon Austria Labs, Autriche, (3) Deutsches Zentrum Für Luft-Und Raumfahrt, Allemagne | 00426 - Influence of hot-firing tests on the characteristics and activity of a catalyst for the hydrogen peroxide decomposition<br><br>Santiago CASU (1), Bastian GEIGER (1), Rainer KIEMEL (1), Jean-Yves LESTRADE (2), Jerome ANTHOINE (2)<br><br>(1) Heraeus Deutschland Gmbh & Co. Kg., Allemagne, (2) Onera/dmpe, University Of Toulouse, France | 00020 - Innovative Xenon/Krypton FMS (Feed Management System) for Electric Propulsion, from R&D to serial production.<br><br>Simon CARPENTIER (1), Yoann FENDLER (1), Pascal BARBIER (1), Francois MARTIN (1), Eric GUILBAUD (1), Claude BONIFACE (2), Gaelle GIESEN (2)<br><br>(1) Air Liquide, France, (2) Cnes, France | 00025 - Development of Iodine Propellant and Flow Control Units Suitable for Multiple Propulsion Systems<br><br>Javier MARTÍNEZ MARTÍNEZ, Dmytro RAFALSKYI, Ane AANESLAND<br><br>Thrustme, France                                                                                                                                                                                                                                                                       | 00266 - Hall Thruster ST–25 developed by Space Electric Thruster Systems (SETS)<br><br>Dmitri VORONOVSKYI (1), Olexandr PETRENKO (1), Bohdan YURKOV (1), Stanislav TOLOK (1), Sergei KULAGIN (2)<br><br>(1) Space Electric Thruster Systems, Ukraine, (2) Institute Of Technical Mechanics Ukrainian Academy Of Science, Ukraine                                                                                                                                                           |
|         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 12:40   |   | LUNCH BREAK                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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# EXHIBITION and NETWORKING



