	DAY 1 : March 17th, 2021 SPACE DEMOCRATIZATION	
	PLENARY SESSION	EXHIBITION and NETWORKING
9h00	CONFERENCE INTRODUCTION Louis LE PORTZ, 3AF Chairman, Giorgio SACCOCCIA, Dominique RIBEREAU, Guillermo ORTEGA, Co-Chairs of the conference	
9h20	Plenary Round Table #1 : AGENCIES MID AND LONG TERM POLICIES Joseph ASHBAHER, ESA, Jean -Yves LE GALL, CNES, Walter PELZER, DLR, Christian HAUGLIE-HANSSEN, Norwegian Space Agency, Graham TURNOCK, UKSA, Kailasavadivoo SIVAN, ISRO, Hitoshi KUNINAKA, JAXA, Giorgio SACCOCCIA, ASI Chair : Chiara MANFLETTI, ESA	
10h50	COFFEE BREAK	
11h10	Plenary Round Table #2 : PRIMES AND OPERATORS VS SUPPLIERS FOR SPACE TRANSPORTATION and SPACECRAFT Tommaso MISURI, SITAEL, Christina JETZSCHMANN, Airbus Defence and Space GmbH, Onno VERBENE, NAMMO, V. NARAYANAN, LPSC/ISRO, Hervé GILIBERT, ArianeGroup, Guy PEREZ, OHB, Patrick VAN PUT, Bradford and ECAPS, Eric KRUCH, SES Chairs : Dominique RIBEREAU, ArianeGroup, Jamila MANSOURI, ESA	
12:40	LUNCH BREAK	

14h00		**KEYNOTE SPEECH #1: Space democratization** **Matteo PECCONERI , AVIO S.p.A., IT**						EXHIBITION and NETWORKING
		PARALLEL SESSIONS						
		Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**	**Room 6**	**Room 7**
		SESSION 01 - ST **Lox/Methane Engine developements**	**SESSION 02 - ST** **Solid Rocket Motors**	**SESSION 03 - SC** **Cubesat Propulsion Systems 1**	**SESSION 04 - SC** **Electric Propulsion 1**	**SESSION 05 - SC** **Modeling and Simulation 1**	**SESSION 06 - SC** **Capabilities and Techniques**	**SESSION 07 - SC** **Chemical Thrusters 1**
CHAIR 1		Marc VALES, Dassault Aviation, FR	Yann TALAMONI, ArianeGroup, FR	Alberto GARBAYO, AVS -UK, UK	Michele COLETTI, Thales Alenia Space, UK	Victor FERNANDEZ (ESA)	Mark FORD (ESA)	Lorenzo BISI, OHB, SE
CHAIR 2		Simon HYDE (ESA)	Marco LEONARDI (ESA)	Davina DI CARA (ESA)	Jose GONZALEZ DEL AMO (ESA)	Helmut CIEZKI, DLR, DE	Simone CIARALLI, OHB, SE	Ferran VALENCIA (ESA)
14:40	1	00159 - Prometheus: Precursor of new low-cost rocket Engine Family Pamela Simontacchi ArianeGroup - FR	00007 - P120C Solid Rocket Motor - Synthesis of the development of the common propulsive SRM for Ariane 6 and Vega-C Tarquinio Germani EUROPROPULSION - FR	00102 - Development of impulse bit-based effective thrust control for fine precision propulsion systems on CubeSats Sakari Teerikoski GomSpace Sweden - SE	00080 - Development status of the Advanced Cusp Field Thruster propulsion system Max Vaupel Airbus - DE	00291 - Demonstrator of a Continuously Operating Divert- and Attitude Control System with Run Time of One Minute Norman Hopfe Bayern-Chemie Gmbh - DE	00079 - Electric Propulsion Torsional Thrust Balance with wireless microwave power transfer Kyaw Swar AVS - Added Value Solutions UK - UK	00059 - An Overview of the LEROS 2c MMH/MON High Performance, Cost Effective Apogee Engine Robert Westcott Nammo - GB
15:00	2	00097 - Development status of the liquid oxygen and methane M10 rocket engine for the Vega-E upper stage Daniele Kajon AVIO SpA - IT	00414 - Ariane 6 & VEGA-C Programs - The P120C SRM Nozzle Qualification and Manufacturing Transition Phase Yann Talamoni ArianeGroup - FR	00314 - Assessment of the impact of a miniaturized electric propulsion system on the cubesat technologies Fabrizio Stesina Politecnico di Torino - IT	00402 - The design, manufacture, and testing of a low powered magnetically shielded krypton Hall effect thruster. Thomas Munro-O'Brien University of Southampton - UK	00306 - Assessment of numerical diffusion effects in magnetized plasma plume simulations Alberto Modesti Universidad Carlos III de Madrid - UC3M - ES	00263 - The Design, Fabrication And Test Progress Summary of the Iridium catalysed electrolysis thruster Charles Muir Imperial College London - UK	00458 - Effect of Chamber Pressure and Mixture Ratio variation in chamber temperature of Liquid rocket thruster Shiju P. Nair Liquid Propulsion Systems Centre - ISRO - IN
15:20	3	00160 - HYPROB-NEW: recent developments of the LOX/LCH4 research line Francesco Battista CIRA - IT	00355 - A Sounding Rocket Solid Propellant First Stage Alexander Weigand Bayern-Chemie GmbH - DE	00425 - Miniaturizing a resistojet manufacturing, postproduction analysis and testing Swati Thirumangalath VTT & Aurora Propulsion Technologies Oy - FI	00155 - Model of the Space Charge Limited Electron Emission from Dispenser Cathodes Jan-Philipp Wulfkuehler Technische Universität Dresden - DE	00559 - A software for computational plasma engineering for European space industry Dejan Petkow SPARC Industries SARL - LU	00168 - Laser-induced fluorescence technique development for Hall thrusters diagnostic in 3D space Yordanka Dancheva Aerospazio Tecnologie - IT	00459 - Sensitivity Study on Pulse mode performance in AOCS Thruster due to temperature variations M Ponnuswamy Liquid Propulsion Systems Centre - ISRO - IN
15:40	4	00416 - Development of LOX-Methane Technology Demonstrator engine Anish K C Liquid Propulsion Systems Centre - ISRO - IN	00401 - Collecting data on aluminum combustion and its oxides in solid rocket motors Stefania Carlotti Politecnico di Milano - IT	00311 - Modular impulsive green monopropellant propulsion system (MIMPS-G) Ahmed Nosseir TU DELFT x University of Pisa - IT	00470 - Ariane Group 5A Neutralizer qualification overview Christian Altmann ArianeGroup - DE	00111 - Numerical simulation of the plume of a Magnetically Enhanced Plasma Thruster Simone Di Fede University of Padova - IT	00115 - A non-invasive HET plasma diagnostic tool based on a 1 MSa/s imaging acquisition platform featuring narrow-band spectral filtering and quasi real-time processing Yordanka Dancheva Aerospazio Tecnologie - IT	00462 - Devolepment of deep throttling engine for interplanetry missions Ebin Thomas Indian Space Research Organisation - IN
16:00	5	00088 - Development of a 25 kN Oxygen-Methane Test Chamber Horacio Moreira Omnidea Lda. - PT	00526 - Prediction of multi-factor coupling ablation of EPDM insulation in two-phase environment Le Wang Northwestern Polytechnical University - CN		00117 - Emission characteristics and 1250h endurance test of a cold electron field emitter based on CNTs for space applications. Martin Tajmar Technische Universität Dresden - DE	00274 - Developing a 3D Numerical Model of a Magnetized Vacuum Arc Thruster Adam Obrusnik PlasmaSolve s.r.o. - CZ	00322 - Quartz Crystal Microbalance-based Examination of Sputtering Phenomena of RF Ion Thrusters Jens Simon DLR - German Aerospace Center - DE	00495 - Investigation of Low Power Arcjet Thruster in Test Facilities at IRS and ESA-ESTEC through Numerical Simulation Partho Pratim Upadhyay Institut für Raumfahrtsysteme - DE
16:20		**COFFEE BREAK**						

		PARALLEL SESSIONS							
		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	
		SESSION 08 - ST **Programs**	SESSION 09 - ST **Aerospike Nozzles**	SESSION 10 - SC **Cubesat Propulsion Systems 2**	SESSION 11 - SC **Electric Propulsion 2**	SESSION 12 - SC **Modeling and Simulation 2**	SESSION 13 - SC **Fluid Systems 1**	SESSION 14 - SC **Chemical Thrusters 2**	
CHAIR 1		Gérard ORDONNEAU, ONERA, FR	Ulf PALMNÄS, SE	Alberto GARBAYO, AVS -UK, UK	Michele COLETTI, Thales Alenia Space, UK	Louis WALPOT (ESA)	Markus PEUKERT, OHB, DE	Gilles VIGIER ,3AF,FR	
CHAIR 2		Johan STEELANT (ESA)	Mark FORD (ESA)	Kathe DANNEMEYER (ESA)	Davina DI CARA (ESA)	Bayrem ZITOUNI, OHB, DE	Richard SCHWANE (ESA)	Chris HUNTER (ESA)	
16:40	1	00488 - Technology-driven Selection and Design for future Korean Launch Systems Daeban Seo KARI - KR	00403 - Research Activities in the Development of DemoP1: a LOX/LNG Aerospike Engine Demonstrator Federico Rossi Pangea Aerospace - ES	00082 - Investigation of Thermal Behaviour of Additively Manufactured Green Bi-Propellant Thrusters in CubeSat Applications Using Transient Thermal Modelling Peter Van Den Berg Delft University of Technology - NL	00150 - Performance characterisation of the Water ElecTrolysis Hall Effect Thruster (WET-HET) using direct thrust measurements Alexander Schwertheim Imperial College London - UK	00411 - OpenPlume for EP and CP plume modelling: tool developments status Bayrem Zitouni OHB - DE	00020 - Innovative Xenon/Krypton FMS (Feed Management System) for Electric Propulsion, from R&D to serial production. Pierre Cordesse Air Liquide - FR	00045 - An Overview of the Medium and High Altitude Space Propulsion Test Facilities in Westcott Matthew Palmer Nammo - GB	EXHIBITION and NETWORKING
17:00	2	00587 - Innovations in Propulsion within ESA'S Future Launcher Preparatory Programme (FLPP) Advanced Technology Kate Underhill ESA - NL	00406 - Investigation of aerodynamic thrust-vector control for aerospike nozzles in cold-gas experiments Jan Sieder-Katzmann Technische Universität Dresden - DE	00504 - Study of Plume Impingement on CubeSat Structure and Solar Array by Different Propellants Harshit Saini SRM Institute of Science and Technology - IN	00254 - Design of an experimental ablative pulsed plasma thruster for micropropulsion Scherezade Barquero Universidad Carlos III de Madrid - UC3M - ES	00424 - Plasma brake deorbiting simulation using dynamic space environment Pyry Peitso Aurora Propulsion Technologies - FI	00275 - The Development of Highly Efficient Miniaturised Proportional Valves Based on Piezoelectric PZT Actuators Charles Opoku The Open University - UK	00339 - Overview of Spacecraft Propulsion Activities in Thales Alenia Space in the UK Mark Pollard Thales Alenia Space UK - UK	
17:20	3	00330 - VINCI Ignition system qualification and Flight production and successors Rudi Matthijssen Aerospace Propulsion Products BV - NL	00480 - ACTiVE – Optimisation of a fluidic thrust vector control on aerospike nozzles Martin Propst Technische Universität Dresden - DE	00226 - Experimental Study on Micropropulsion Using Dust Explosion of Aluminum/Magnesium with Water Vapor Masaya Murohara The University of Tokyo - JP	00247 - Design, Set-Up, and First Ignition of the RF Helicon-based Plasma Thruster Francesco Romano University of Stuttgart - DE	00582 - Design of a Hollow Cathode Thruster: Concepts, Parameter Study and Initial Test Results Norman Gondol Technische Universität Dresden - DE	00418 - Investigation of hysteresis on propellant flow rate for 10 cm class microwave ion thruster Yusuke Yamashita JAXA - JP	00576 - Fusion energy based space propulsion using a compact spherical tokamak Adam Baker Rocket Engineering Ltd - GB	
17:40	4	00222 - Overview of rocket testing at the Westcott test facility (2018/2019) Edward Moore Airborne Engineering - GB	00340 - Design and evaluation of aerospike nozzles for upper stage Francesco Nasuti Sapienza University of Rome - IT	00212 - Propulsive Performance Analysis of Energetic Ionic Liquid Mono-Propulsion Systems for Micro-Spacecrafts Asato Wada JAXA - JP	00467 - Serial Production of Space Components for Megaconstellations Nils Hildebrand AST Advanced Space Technologies GmbH - DE	00391 - Characterization of a 5kW-class hall thruster via 2D hybrid simulations Jesús Perales-DÍaz Universidad Carlos III de Madrid - UC3M - ES	00318 - Ongoing Development of next generation Electric Propulsion Fluid Management Systems Johan Kuiper Bradford Engineering - NL	00049 - Development of a Chemical Thrusters Plume Contamination Module in the frame of the Plume Impingement Tool "PITOT" Andrea Binci Thales Alenia Space - IT	
18:00	5			00214 - ENPULSION Nano: A fully integrated electric propulsion system for Small Satellites David Krejci Enpulsion - AT			00583 - Electrostatic Pump Development for micro Liquid Pulsed Plasma Thrusters Cristian Dobranszki University of Southampton - UK		
18:20		END OF DAY 1							

DAY 2 : March 18th, 2021
NEW BUSINESS, NEW MARKETS

PLENARY SESSION

9h00 — Plenary Round Table #3 : European Micro Launchers and Space ports
Part 1 : Challenges for European Micro launchers,
Part 2 : Challenges for European Space ports
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 Engine control	SESSION 16 - ST Combustion chamber 1 & Ignition	SESSION 17 - SC Cubesat Propulsion Systems 3	SESSION 18 - SC Electric Propulsion 3	SESSION 19 - SC Modeling and Simulation 3	SESSION 20 - SC Fluid Systems 2	SESSION 21 - SC Chemical Thrusters 3
CHAIR 1		Gérard ORDONNEAU, ONERA, FR	Didier BOURY, ArianeGroup, FR	Alberto GARBAYO, AVS -UK, UK	Olivier DUCHEMIN, SAFRAN SEP	Toru SHIMADA, JAXA, JAP	Markus PEUKERT, OHB, DE	Kate UNDERHILL (ESA)
CHAIR 2		Mark FORD (ESA)	Carlos MUNOZ (ESA)	Armin HERBERTZ (ESA)	Neil WALLACE (ESA)	Niccola KUTUFA (ESA)	Luca FERRACINA (ESA)	Kenichi KIMOTO, IHI, JP
11:00	1	00236 - VEGA-E Upper Stage Engine Control Unit with closed-loop control for M10 engine Nicole Segala GMV-AD - ES	00043 - Low Order Modeling of High-Frequency Combustion Instabilities in Liquid Rocket Engines Alexandre Fougnie EM2C - FR	00234 - The concept and development status of new green propellant propulsion system named "Pinot-G" Naoki Morita IHI Aerospace - JP	00109 - REGULUS: integration and testing of an iodine electric propulsion system Mirko Magarotto University of Padova - IT	00385 - The study on the performances of the micro cathode arc thruster with different cathode materials Jinyue Geng Beijing Institute of Control Engineering - JP	00208 - European Electronic Pressure Regulator - Engineering Model Test Results Nicholas Solway Nammo - GB	00038 - Estimation of thrust performance from the experimental results of the combustion of magnesium wires in water vapor Mariko Akiyama The University of Tokyo - JP
11:20	2	00477 - Electrical Regulating Valve for Rocket Propulsion Systems Matthias Günther ArianeGroup - DE	00325 - LES simulation for evaluation of acoustic response of subcritical coaxial flame submitted to high-frequency acoustic fields Aurélie Nicole ONERA - FR	00057 - Experimental Investigation and In-flight Characterization of Micronewton Ultra-Precision and Low Noise Proportional Propulsion Technology Xuhui Liu Beijing Institute of Control Engineering - JP	00085 - New EPIC findings: Impact of Mission Total Impulse on Technology Selection & Prerequisites for Lifetime Qualification via Analysis Birk Wollenhaupt OHB System AG - DE	00273 - Simulation-guided engineering of an air-breathing thruster concept Krystof Mrozek PlasmaSolve s.r.o. - CZ	00465 - Experimental studies on Pressure Regulator for failure mode J. Nithya Bharathi Liquid Propulsion Systems Centre - ISRO - IN	00573 - Flow Analysis of a Supersonic Nozzle by means of Quantitative Schlieren Emilia-Georgiana Prisacariu Romanian Research and Development Institute for Gas Turbines - COMOTI - RO
11:40	3	00533 - Nonlinear Control of an Expander-Bleed Rocket Engine using Reinforcement Learning Kai Dresia DLR - German Aerospace Center - DE	00078 - Numerical characterization of the acoustic damping in a cold flow experiment with coupled cavities David Marchal CentraleSupelec - FR	00287 - Development of a cubesat green propellant tank with fine CoG control Michel Poucet LIFT ME OFF - UK	00203 - Electric propulsion alternatives selection to interplanetary missions Olga Starinova Samara National Research University - RU	00047 - Use of numerical modelling to assess the influence of the electrostatic configuration on the electric field in an electrospray thruster Mobin Yunus Malik The University of Manchester - UK	00468 - Flow simulation studies on Pressure Regulator for Lunar Lander Module J. Nithya Bharathi Liquid Propulsion Systems Centre - ISRO - IN	00523 - Delta Qualification of a Normally Closed Valve with Shape Memory Alloy Actuator for Hydrazine applications Pilar Valles ArianeGroup - DE
12:00	4	00496 - On-Ground and In-Flight evaluation of a Redundant Control Electronics for Variable Thrust Liquid Engine in Soft-Landing mission Kiran Ravikumar Liquid Propulsion Systems Centre - ISRO - IN	00238 - Investigation of Laser Ignition Systems in LOX/Methane Thrust Chambers Sebastian Soller ArianeGroup - DE	00207 - 0.5N Thruster for Small Satellite Propulsion System Using HAN/HN-Based "Safe" Green Monopropellant HNP225 Shinji Igarashi IHI Aerospace - JP	00353 - Mission-driven selection of the propulsion system for INNOSAT platform Simone Ciaralli OHB Sweden AB - SE	00585 - Modelling and Optimizing an Electrohydrodynamic Thruster Eduardo Calvo University of Porto - PT	00175 - Answering the challenges for Electrical Capacitance Tomography systems in rocket propulsion tanks Philipp Behruzi ArianeGroup - DE	00536 - Effect of Post Weld Heat Treatment on AA-7075-T6 Pressure Vessel welded by Friction Stir Welding for Space Application Mohamed Khatir Algerian Space Agency - DZ
12:20	5		00095 - 2D Full-Cycle Simulation of Air-Breathing Microwave Rocket Kuniyoshi Tabata The University of Tokyo - JP		00395 - Electric Thruster Selection Criteria: a System Point of View Christophe Koppel KopooS Consulting ind. - FR			#N/A

12:40 — LUNCH BREAK

EXHIBITION and NETWORKING

14:00		KEYNOTE SPEECH #2 : Electric Propulsion Activities at ESA Jose GONZALEZ DEL AMO, ESA						EXHIBITION and NETWORKING
		PARALLEL SESSIONS						
		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7
		SESSION 22 - ST LRE Turbopumps 1 & electro pumps	SESSION 23 - ST Combustion chamber 2	SESSION 24 - SC Cubesat Propulsion Systems 4	SESSION 25 - SC Electric Propulsion 4	SESSION 26 - SC New Propulsion Concepts	SESSION 27 - SC In orbit servicing and debris removal	SESSION 28 - SC Programs and Projects
CHAIR 1		Victor FERNANDEZ (ESA)	Didier BOURY, ArianeGroup, FR	Alberto GARBAYO, AVS -UK, UK	Olivier DUCHEMIN, SAFRAN SEP	Jose GONZALEZ DEL AMO (ESA)	Markus PEUKERT, OHB, DE	Johan STEELANT (ESA)
CHAIR 2		Marc VALES, Dassault Aviation, FR	Simon HYDE (ESA)	Louis WALPOT (ESA)	Cheryl COLLINGWOOD (ESA)	Alain DEMAIRÉ, OHB, SE	Jeroen VAN DEN EYNDE (ESA)	Simone CIARALLI, OHB, SE
14:40	1	00374 - ArianeGroup R&T activities on Fluid Structure Interaction (FSI) for space turbomachinery Ariane Deneuve ArianeGroup - FR	00081 - Wall Pressure Effects of Nitrogen and Hydrogen Coolant Layers in a Transpiration Cooled Model Scramjet Combustor Friedolin Strauss DLR - German Aerospace Center - DE	00270 - E X B probe measurements in the plasma plume of a 100 W-class Hall thruster Thibault Hallouin ICARE - CNRS - FR	00301 - PN-3 helicon plasma device as a testing facility for plasma propulsion study Dmitry Kutuzov National research center "Kurchatov institute" - RU	00331 - Preliminary investigations of the electromagnetic fields in the far plume of a Helicon Plasma Thruster Pedro José Jiménez Universidad Carlos III de Madrid - UC3M - ES	00486 - Active Debris Multi-Removal Mission Based on Electrodynamic Tethers Gabriel Borderes Motta Universidad Carlos III de Madrid - UC3M - ES	00033 - Ariane Group Electric Propulsion 2020 – An Overview Hans Leiter ArianeGroup - DE
15:00	2	00549 - Optimization And Performance Characterization At Off-Design Conditions For Supersonic Impulse Turbine Blades Robson Hahn DLR - German Aerospace Center - DE	00337 - Dependency of Coolant Mass Flow on Heat Flux and Surface Temperature in Rocket Combustion Chambers Pascal Kringe DLR - German Aerospace Center - DE	00218 - Searching for chaotic behavior in the ion current waveforms of a Hall effect thruster Agnieszka Szelecka IPPLM - PL	00143 - Validation of a Xenon Propulsion System Simulation Model with 5-kW class Hall-Effect Thruster Coupled Tests Michele Coletti Thales Alenia Space - IT	00091 - Plasma acceleration by oscillating electric and magnetic fields Amnon Fruchtman H.I.T. - Holon Institute of Technology - IL	00286 - Development of a Thruster Gimbal Mechanism for Accurate Proximity Operations Marcos Perez LIFT ME OFF - UK	00288 - Ongoing Satellite Propulsion Activities at Bradford Space William Van Meerbeeck Bradford Engineering - NL
15:20	3	00071 - Experimental Validation of Supersonic Turbines for Launcher applications Cosmin Petru Suciu Romanian Research and Development Institute for Gas Turbines - COMOTI - RO	00122 - A comparison between film and transpiration cooling performance in a rocket combustion chamber Stijn Koehler Delft University of Technology - NL	00396 - A numerical parametric investigation on the optimal design and operation of coaxial ECR thrusters Alvaro Sanchez-Villar Universidad Carlos III de Madrid - UC3M - ES	00471 - Electron and ion properties in the beam and discharge of a Helicon plasma source for application in spacecraft propulsion Alfio Emanuele Vinci CNRS - FR	00281 - Faraday cup design for low power electric thrusters Valentin Hugonnaud Enpulsion - AT	00006 - Analysis and verification of in-orbit fuelling system during development and breadboard testing Avichai Elimelech Thales Alenia Space UK - UK	00567 - Overview of the space propulsion activities at the CNES Toulouse Space Center Thomas Liénart CNES - FR
15:40	4	00578 - Concept for compact electropump for thruster engines Alexandru-Claudiu Cancescu Romanian Research and Development Institute for Gas Turbines - COMOTI - RO	00182 - Implementation of an Acoustic Modes Calculation Method for an 25 kN Engine with Comparison to the L75 Engine Results Arthur Durigan Bahdur CLA - Alcântara Launch Center - BR		00070 - Improvement of a numerical tool for the simulation of an Helicon Plasma Thruster Nabil Souhair Università di Bologna - IT	00108 - Two-dimensional Full Particle-in-Cell Simulation of Magnetic Sails in Formation Flight Akane Wada Tohoku University - JP		00145 - An experimental study of the ion injector with C/C-Ipresskon® grids Oleg Peysakhovich JSC Kompozit - RU
16:00	5	#N/A	00482 - Subsonic and supersonic combustion in the flight Mach number range from 5 to 6 Luciano Galfetti Politecnico di Milano - IT		00110 - Quasi 2D PIC Model of a Magnetically Enhanced Plasma Thruster Marco Minute University of Padova - IT	00023 - Design, Manufacture and Testing of a Laser Micro-manufactured Electrospray Hole Emitter Sahil Maharaj University of Manchester - UK	#N/A	00290 - ESA Propulsion Laboratory at ESTEC Luca Bianchi ESA - NL
16:20		COFFEE BREAK						

		PARALLEL SESSIONS							
		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room 7	
		SESSION 29 - ST LRE Turbopumps 2	SESSION 30 - ST Engine/Vehicle Interfaces	SESSION 31 - SC Cubesat Propulsion Systems 5	SESSION 32 - SC Electric Propulsion 5	SESSION 33 - SC New propulsion Concepts 2	SESSION 34 - SC Hybrid Systems 1	SESSION 35 - SC Manufacturing and Processess	
CHAIR 1		Lilian PREVOST, (CNES), FR	Chris HUNTER (ESA)	David KREJCI, Enpulsion, DE	Michele COLETTI, Thales Alenia Space, UK	Helmut CIEZKI, DLR, DE	Davar FEILI (ESA)	Sébastien BIANCHI, Air Liquide, FR	
CHAIR 2		Csaba JEGER (ESA)	Gérard ORDONNEAU, ONERA, FR	Matthew SMITH (ESA)	Jose GONZALEZ DEL AMO (ESA)	Mark FORD (ESA)	Toru SHIMADA, JAXA, JAP	Marco DE ROSA (ESA)	
16:40	1	00417 - Mathematical Modeling of Powerhead Test Article for a Semi-Cryogenic Engine Avinash Chandra Liquid Propulsion Systems Centre - ISRO - IN	00157 - Research on Propellant Slosh Dynamics of a Martian Moon Lander Keitaro Anii The University of Tokyo - JP	00289 - Endurance Test of PETRUS 5J and Presentation of a Flight Model Design Christoph Montag University of Stuttgart - DE	00176 - HEMPT electric propulsion status update Ernst Bosch Thales - DE	00040 - Modeling the Propellant-less Thrust Obtainable from Quantised Inertia. Mike Mcculloch University of Plymouth - UK	00278 - The SpaceDrive Project - Conclusion of Mach-Effect-Thruster Experiments on High-Precision Balances in Vacuum Maxime Monette Technische Universität Dresden - DE	00352 - Development and Qualification of an Electric Propulsion Thruster Orientation Mechanism for Electra GEO satellite Ashley Hallock OHB Sweden AB - SE	EXHIBITION and NETWORKING
17:00	2	00537 - Development of High Speed Hybrid Bearings for Reusable Pump-Fed Liquid Rocket Engines Angelo Pasini University of Pisa - IT	00361 - Drag analysis of a modern lightweight launch vehicle at high mach numbers Ainslie French CIRA - IT	00272 - Long lifetime solenoid valve for Electric Propulsion Systems Bohdan Yurkov Space Electric Thruster Systems - UA	00192 - Hybrid PIC-Fluid Simulation of a Waveguide ECR Magnetic Nozzle Plasma Thruster Marco Riccardo Inchingolo Universidad Carlos III de Madrid - UC3M - ES	00104 - Thrust Measurements and Evaluation of Asymmetric Infrared Laser Resonators for Space Propulsion Oliver Neunzig Technische Universität Dresden - DE	00283 - Hybrid Propulsion System for Deep Space CubeSat mission Fredrik Persson GomSpace Sweden - SE	00224 - Magnetic Field Enhancement of the Quad Confinement Thruster (QCT): Design and Early Development of the QCT Phoenix Emmanuelle Rosati Azevedo AVS - Added Value Solutions UK - UK	
17:20	3	00569 - Contributions regarding the gas dynamics of a turbine with partial admission Alexandru-Claudiu Cancescu Romanian Research and Development Institute for Gas Turbines - COMOTI - RO	00588 - Design optimisation and analysis of very high power transportation system to Mars Orr Cohen ESA - NL	00112 - MEMS thruster based 6DoF propulsion system for CubeSats Umut Cindemir GomSpace Sweden - SE	00521 - Development activities on the Engineering Qualification Model of SITAEL's 5kW-class Hall thruster unit Tommaso Andreussi SITAEL - IT	00198 - Net-shape Technologies for Low-cost Manufacture of Tank Shells and Weld-free COPV Liner Ralf Becker TISICS Limited - UK	00541 - Common Propellant Hybrid Propulsion System Architecture using Applied-Field Magnetoplasmadynamic Thrusters Marcus Collier-Wright Neutron Star Systems - DE	00493 - Market Entries for SUPREMETM Thrusters: Commercialization of Superconductor-based-AF-MPD Manuel La Rosa Betancourt Neutron Star Systems - DE	
17:40	4	00552 - Versatile water test bench for launchers liquid engines turbo-pumps and fluids management devices Dan Ifrim Romanian Research and Development Institute for Gas Turbines - COMOTI - RO	00584 - Rocket Engine Digital Twin – Modeling and Simulation Benefits David Jimenez Mena Siemens Digital Industry Software - FR	00285 - Development of an Innovative Chemical Propulsion Subsystem for 12U Earth Observation and Telecommunication Missions Marcos Perez LIFT ME OFF - UK	00044 - Spectral radiance measurements of SPT140 thrusters Antoine Iffly Thales Alenia Space - FR	00308 - Plasma Acceleration by Electromagnetic Nozzle for an Inertial Electrostatic Confinement Cathode: Development and Characterization Yung-An Chan University of Stuttgart - DE	00024 - Comparison of green and conventional rocket propellants: system analysis tool for in-space propulsion Lukas Werling DLR - German Aerospace Center - DE	00491 - High Temperature Superconductor based propulsion and power system architectures as enablers for high power missions Marcus Collier-Wright Neutron Star Systems - DE	
18:00	5	00580 - Development of turbines nitrogen feed systems for liquid rocket engines turbo-pumps test benches Dan Ifrim Romanian Research and Development Institute for Gas Turbines - COMOTI - RO	00169 - The Evolution of the Liquid Cores in Flash Boiling Liquid Nitrogen Sprays Andreas Rees DLR - German Aerospace Center - DE			00012 - Lunar Mission Tanks Using Surface Tension Propellant Management Devices for Propellant Acquisition and Supply Don Jaekle Pmd Technology - US	00013 - Investigation of Next Generation Combined Propulsion Architectures for Electric and Chemical Propulsion Oscar Jennings Airbus - GB	00268 - High-Accuracy Thrust Measurements of the EM Drive and Elimination of False-Positive Effects Martin Tajmar Technische Universität Dresden - DE	
18:20		END OF DAY 2							

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**
Helmut CIEZKI, DLR

10h40 — COFFEE BREAK

PARALLEL SESSIONS

		Room 1	Room 2	Room 3	Room 4	Room 5	Room 6	Room7
		SESSION 36 - ST Green & Hybrid Propulsion 1	SESSION 37 - ST LUMEN Project	SESSION 38 - SC Green Propulsion 1	SESSION 39 - SC Cold Gas Thrusters	SESSION 40 - SC Propellants 1	SESSION 41 - SC Electric Propulsion 6	SESSION 42 - SC ISRU 1
CHAIR 1		Jérôme ANTHOINE, ONERA, FR	Stefan SCHLECHTRIEM, DLR, DE	Helmut CIEZKI, DLR, DE	Gilles VIGIER ,3AF,FR	Sébastien BIANCHI, Air Liquide, FR	George SCHMIDT, NASA, US	Nathalie GIRARD (CNES)
CHAIR 2		David PERIGO (ESA)	Marco DE ROSA (ESA)	Kenichi KIMOTO, IHI, JP	Niccola KUTUFA (ESA)	Stephan SCHUSTER (ESA)	Kathe DANNEMEYER (ESA)	Christophe BONNAL, CNES, FR
11:00	1	00499 - Preliminary assessments for the development of a green storable bipropellant rocket engine based on H2O2 Stefania Carlotti Politecnico di Milano - IT	00375 - LUMEN Demonstrator – Project Overview Jan Deeken DLR - German Aerospace Center - DE	00312 - A survey on energetic ionic liquid green propellants and investigation of feed and pressurization systems for small satellites high-thrust impulsive propulsion Ahmed Nosseir TU DELFT x University of Pisa - IT	00089 - Development of cold gas propulsion system for a Portuguese EO & maritime surveillance satellite Nuno Fernandes Omnidea-RTG GmbH - DE	00017 - Using of Iodine as Propellant in Electric Thrusters Konstantinos Katsonis DEDALOS Ltd - GR	00307 - Performance characteristics and efficiency analysis of a microwave cathode - 200 W Hall thruster system Takato Morishita The University of Tokyo - JP	**KEYNOTE SPEECH #3 :** **Lunar ISRU propellant production for in-situ refueling: Operational challenges and implications for space propulsion** **Laurent SIBILLE, NASA, USA**
11:20	2	00363 - Overview of the development of a H2O2 based chemical attitude control system for VEGA-C Bastien Haemmerli Nammo Raufoss AS - NO	00345 - LUMEN Turbopump – Status of the Development and Testing Tobias Traudt DLR - German Aerospace Center - DE	00381 - Development of Hydrogen Peroxide based Monopropellant Thruster Narender Kumar Liquid Propulsion Systems Centre - ISRO - IN	00257 - Direct Thrust Measurements of an Iodine Cold Gas Propulsion System Elena Zorzoli Rossi ThrustMe - FR	00171 - Effects of bias potential inside the water ion thruster on thrust performance Yasuho Ataka University of Tokyo - JP	00297 - Radial particle-in-cell simulations of a Hall Thruster discharge with different anomalous transport models Alberto Marín-Cebrían Universidad Carlos III de Madrid - UC3M - ES	
11:40	3	00373 - Hydrogen Peroxide RCS on a sounding rocket - a milestone towards launch vehicles and satellite platforms applications. Tomasz Noga Łukasiewicz Research Network - Institute of Aviation - PL	00292 - LUMEN Thrust Chamber - Injector Performance and Stability Justin Hardi DLR - German Aerospace Center - DE	00413 - Development of Catalyst for HAN based Monopropellant Thruster Savitry Kumari Liquid Propulsion Systems Centre - ISRO - IN	00455 - Proba-2 Cool Gas Generator Experiment: 10 years in orbit, experiences and lessons learned Berry Sanders HDES Service & Engineering BV - NL	00061 - The investigation of alternative solid propellants in Hall Effect Thrusters Vlad-George Tirila University of Southampton - UK	00090 - Design and preliminary study of a 200W Cylindrical Hall Thruster Tatiana Perrotin Universidad Carlos III de Madrid - UC3M - ES	00016 - Spacecraft Propulsion with ISRU near Mars and Venus, Based on CO2 Propellant Chloe Berenguer DEDALOS Ltd - GR
12:00	4	00485 - Design of a Hovering Sonding Rocket Stage for Measurements in the High Atmosphere Karl Wieland Naumann Bayern-Chemie GmbH - DE	00048 - LUMEN Thrust Chamber - flame anchoring for shear coaxial injectors Michael Börner DLR - German Aerospace Center - DE	00426 - Influence of hot-firing tests on the characteristics and activity of a catalyst for the hydrogen peroxide decomposition Santiago Casu Heraeus Deutschland GmbH & Co. KG - DE	00087 - (X)MET: DESIGN AND TEST OF MICROWAVE ELECTROTHERMAL THRUSTERS WITH ARGON and XENON Thomas Baxter AVS - Added Value Solutions UK - UK	00054 - Research on Multiphase Flow and Catalytic-Combustion Reaction of Microthruster with ADN-Based Monopropellant Xuhui Liu Beijing Institute of Control Engineering - JP	00056 - Development Status of the ST-40 Hall Thruster Danill Shcherbak Space Electric Thruster Systems - UA	00018 - Evaluation of Earth Atmosphere Remnants Used as Propellant in Electric Thruster Technology Chloe Berenguer DEDALOS Ltd - GR
12:20	5	00233 - Controlling Low Frequency Instability in Hybrid Rocket Combustion Jina Kim Konkuk University - KR	00068 - LUMEN – Design of the Regenerative Cooling System for an Expander Bleed Cycle Engine using Methane Jan Haemisch DLR - German Aerospace Center - DE				00195 - About Development Feasibility of a High Specific Impulse Thruster with Closed Electron Drift Alexander Solodukhin SSC Keldysh Research Centre - RU	00364 - Oxygen and propellant production on Mars by non-equilibrium plasmas Vasco Guerra Universidade de Lisboa - PT

12:40 — LUNCH BREAK

EXHIBITION and NETWORKING

14:00		**KEYNOTE SPEECH #4: Can Space Propulsion Reusability turn dreams in reality ? Gilles VIGIER, AAAF** **- A space launcher designer point of view - Jean Philippe DUTHEIL, ArianeGroup, FR** **- From reusability to space plane daily flights" - Marc VALES, Dassault Aviation, FR**						EXHIBITION and NETWORKING
		PARALLEL SESSIONS						
		Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**	**Room 6**	**Room 7**
		SESSION 43 - ST Green & Hybrid Propulsion 2	**SESSION 44 - ST** Propellant behavior	**SESSION 45 - SC** Green Propulsion 2	**SESSION 46 - SC** Mission Analysis and Flight Experience	**SESSION 47 - SC** Propellants 2	**SESSION 48 - SC** Electric Propulsion 7	SESSION 49 - SC ISRU 2
CHAIR 1		Jérôme ANTHOINE, ONERA, FR	Gilles VIGIER ,3AF,FR	Wilhelm DINGERTZ, Bradford Ecaps	Stephan SCHUSTER (ESA)	Sébastien BIANCHI, Air Liquide, FR	Niccola KUTUFA (ESA)	Nathalie GIRARD (CNES)
CHAIR 2		Dirk GREUEL (ESA)	Ferran VALENCIA (ESA)	Markus PEUKERT, OHB, DE	Yann TALAMONI, ArianeGroup, FR	Carlos MUNOZ (ESA)	Birk WOLLENHAUPT, OHB, DE	Christophe BONNAL, CNES, FR
14:40	1	00524 - Green Propellants for In-Space Propulsion: Experimental and Modelling Study on the Combustion Chemistry of Ethane/Ethene-Nitrous Oxide Mixtures Sandra Richter DLR - German Aerospace Center - DE	00250 - Experimental study on visualization of gas-liquid two-phase flow with self-pressurization for rocket propellants Kazuki Yasuda Muroran Institute Of Technology - JP	00280 - Ignition investigations of a novel hypergolic ionic liquid with hydrogen peroxide in drop tests Felix Lauck DLR - German Aerospace Center - DE	00444 - Overview of an optimised thrust balance used for accurate measurements during qualification endurance testing of an electrical thruster Pierre Moutet DACTEM Développement - FR	00191 - Performance analysis of alternative propellants for a helicon plasma thruster Jiewei Zhou Universidad Carlos III de Madrid - UC3M - ES	00264 - Experimental characterisation of the novel Halo plasma thruster for small satellite applications Silvia Masillo Surrey Space Centre (SSC) - UK	00384 - A Detailed Global Model of Hydrogen in Support of Neptune Study Konstantinos Katsonis DEDALOS Ltd - GR
15:00	2	00058 - Development of Hybrid-Hybrid Rocket Propulsion Technology and Its Prospect in Space Exploration Jong-Shinn Wu National Chiao Tung University - TW	00190 - Studies on Thermodynamic Vent System for Cryogenic Propellant Storage Tank. (Verification Test for Jet Mixing with Self Pressurization) Ryoji Imai Muroran Institute Of Technology - JP	00379 - 100 mN Green Monopropellant Thruster Development Tomas Hasanof Plasma Processes LLC - US	00397 - EP plasma plume in-Orbit experiments Jens Laube OHB System AG - DE	00002 - New possibilities on creating apogee propulsion systems with electropump propellant supply systems Andrey Kukhta Yuzhnoye State Design Office - UA	00266 - Hall Thruster ST--25 developed by Space Electric Thruster Systems (SETS) Stanislav Tolok Space Electric Thruster Systems - UA	00494 - ISRU produced hydrogen peroxide as multipurpose fuel for spacecraft propulsion, fuel cells, and life support systems. Onno Verberne Nammo Raufoss AS - NO
15:20	3	00029 - Investigation of novel metallized monopropellants Maxim Kurilov DLR - German Aerospace Center - DE	00579 - Optimizing by numerical simulation the Anti-Vortex Device for swirling flow reduction during the drainage of a cryogenic liquid in a tank Alexandru-Claudiu Cancescu Romanian Research and Development Institute for Gas Turbines - COMOTI - RO	00441 - Optimization of the catalytic bed in a decomposition chamber for H2O2/liquid bipropellant thruster Hugo Quintens CNES - FR	00338 - Plasma Jet Pack (PJP) Technology in-flight results Luc Herrero COMAT - FR	00132 - Investigation of Silver Nanoparticles as Novel Catalysts for Hypergolic Hydrocarbon Propellants with Hydrogen Peroxide Sophie Ricker DLR - German Aerospace Center - DE	00133 - Advances on low-dimensionality fluid modeling of Hall thruster discharges Enrique Bello-Benítez Universidad Carlos III de Madrid - UC3M - ES	00386 - Mars Ascent Vehicle Propulsion System Design By Using CO2 As An In-Situ Oxidizer Compound Ozan Kara KOC University - TR
15:40	4		00527 - Effects of compounds in liquefied methane on rocket engine operation Elke Goos DLR - German Aerospace Center - DE	00473 - ECAPS HPGP 1N Thruster Development and Implementation – State of the Art and Heritage Wilhelm Dingertz Bradford Ecaps - SE	00448 - MARS-/EUROPA-INPPS Flagship Missions: High and Low Power Electric Thrusters, Orbits/Payloads and Co-Flying Satellites Frank Jansen DLR - German Aerospace Center - DE	00119 - Performance and Behaviour of Unconventional Molecular Propellants in a Cylindrical Hall Thruster Rachel Moloney University of Surrey - UK	00158 - XJET: Design upgrade and preliminary characterization for an electrodeless ECR thruster Emmanuelle Rosati Azevedo AVS - Added Value Solutions UK - UK	#N/A
16:00	5			00067 - ICE: A Modular Water Electrolysis Propulsion System Alberto Garbayo AVS - Added Value Solutions UK - UK		00025 - Development of Iodine Propellant and Flow Control Units Suitable for Multiple Propulsion Systems Javier Martínez ThrustMe - FR	00483 - AIRBUS DS Power Processing Units New developments for HET & GIT and technologies status Fernando Javier Pintó Marín Airbus DS - ES	#N/A
16:20		**COFFEE BREAK**						

		PARALLEL SESSIONS					
		Room 1	Room 2	Room 3	Room 4	Room 5	
		SESSION 50 - ST Manufacturing & Process	**SESSION 51 - ST** Modeling Thrust chamber	**SESSION 52 - SC** Green Propulsion 3	**SESSION 53 - SC** Electric Propulsion 8	**SESSION 54 - SC** Cathodes	
CHAIR 1		Sébastien BIANCHI, Air Liquide, FR	Gérard ORDONNEAU, ONERA, FR	Wilhelm DINGERTZ, Bradford Ecaps	Olivier DUCHEMIN, SAFRAN SEP	Michele COLETTI, Thales Alenia Space, UK	
CHAIR 2		Marc VALES, Dassault Aviation, FR	Lilian PREVOST, (CNES), FR	Lorenzo BISI, OHB, SE	Denis ESTUBLIER (ESA)	Birk WOLLENHAUPT, OHB, DE	
16:40	1	00099 - Development of an ALM Thrust Chamber for VEGA-E M10 Rocket Engine Daniele Liuzzi AVIO SpA - IT	00240 - Investigation of Liquid Cooling Films for storable propellant rocket engines Sebastian Soller ArianeGroup - DE	00094 - Experimental testing of small H2/O2 thrusters in atmospheric and vacuum conditions Razvan Nicoara Romanian Research and Development Institute for Gas Turbines - COMOTI - RO	00100 - Development update of the X-EPT Microwave Gridded Ion Thruster for the IMPULSE Propulsion Architecture Sam Reeve AVS - Added Value Solutions UK - UK	00131 - Investigation of C12A7 electride as a thermionic neutralizer Nils Gerrit Kottke Airbus - DE	EXHIBITION and NETWORKING
17:00	2	00219 - Additive manufacture of rocket engine combustion chambers from CuCrZr (C-18150) using the DMLS process Iain Waugh Airborne Engineering - UK	00259 - Machine Learning Methods for Design and Operation of Liquid Propellant Rocket Engines Guenther Waxenegger-Wilfing DLR - German Aerospace Center - DE	00064 - Electrolysis Based Water Propulsion for Future 1-Ton Class LEO Mission Satellites Nuno Fernandes Omnidea-RTG GmbH - DE	00421 - HIPATIA: a project for the development of the Helicon Plasma Thruster and its associated technologies to intermediate-high TRLs Mercedes Ruiz SENER Aeroespacial - ES	00153 - Endurance Test of a Heaterless Hollow Cathode using the Emitter Material C12A7 Electride Christian Drobny Technische Universität Dresden - DE	
17:20	3	00220 - Additive manufacture of rocket engine combustion chambers using the ABD®-900AM Nickel superalloy Iain Waugh Airborne Engineering - UK	00362 - Development of a film-cooled thrust chamber component in the ESPSS library Pierluigi Concio Sapienza University of Rome - IT	00243 - Conceptual design of dual plates throttleable injector for monopropellant thruster: a cold flow study Yehyun Kim Korea Advanced Institute of Science and Technology - KR	00295 - Power Processing Unit Activities at Thales Alenia Space in Belgium Eric Bourguignon Thales Alenia Space in Belgium - BE	00334 - Helical Plume Instabilities in a 25A LaB6 Hollow Cathode Giulia Becatti University of Pisa - IT	
17:40	4	00165 - Selective laser manufactured cooper alloy nozzle for sub-scale thrust chambers Dmitry Suslov DLR - German Aerospace Center - DE	00519 - Injector wall heat transfer quantification in supercritical nitrogen injection Leandro Barbosa Magalhães University of Beira Interior - PT	00299 - Optical Investigation on the Hypergolic Reaction Between Green Liquid Ionics and Highly Concentrated Hydrogen Peroxide Robert Stützer DLR - German Aerospace Center - DE	00005 - Long-Duration Wear Testing of the ASTRAEUS Hall Thruster, Phase I: 50 kg Xe Total Throughput Ryan Conversano JPL - US	00392 - 2 dimensional modelling of heaterless hollow cathodes Stephen Gabriel University of Southampton - UK	
18:00		**KEYNOTE SPEECH #5: Conclusions of the Space Propulsion Conference, 7th Edition** **Alberto GARBAYO, AVS UK, Helmut CIEZKI, DLR**					
18:30		**END OF CONFERENCE**					