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Centro para el
Desarrollo
Tecnológico
Industrial

EPIC WORKSHOP 2017

Centro para el Desarrollo Tecnológico Industrial - CDTI
Cid, 4. 28001 Madrid

AGENDA / FINAL PROGRAMME: TUESDAY 24TH OCTOBER 2017

08:20-09:00 Registration

Welcome (Chair: J. López Reig, CDTI)

09:00-09:15 Jorge LÓPEZ REIG, CDTI: CDTI Welcome, Inauguration Workshop

09:15-09:30 Jorge LÓPEZ REIG, CDTI: Introduction, and organization logistics

09:30-09:50 José GONZÁLEZ DEL AMO, ESA: PSA Welcome, and EPIC Workshop Objectives

H2020, EP SRC and PSA (Chair: J. Gonzalez Del Amo, ESA)

9:50-10:10 Tanja ZEGERS, European Commission: SRC & EPIC policy context, H2020 WP 2018-2020

10:10-10:30 Florence BEROUD, REA: Implementation of the SRCs

10:30-10:40 José GONZÁLEZ DEL AMO, ESA: EPIC PSA and activities

10:40-11:15 Coffee break

Incremental SRC Operational Grants (Chair: L. Martin-Perez, DLR)

11:15-11:55 Idris HABBASSI, Safran Aircraft Engines: CHEOPS Consortium for Hall Effect Orbital Propulsion System

Farid INFED, ArianeGroup: GIESEPP: GRIDDED ION ENGINE

11:55-12:35 STANDARDISED ELECTRIC PROPULSION PLATFORMS

12:35-13:15 Ernst BOSCH, Thales Deutschland GmbH: HEMPT-NG – Development to provide European competitive EP solutions for future space missions

13:15-14:15 Lunch break

Satellite Large System Integrators (Chair: P. Lionnet, Eurospace)

14:15-14:30 José GONZÁLEZ DEL AMO, ESA: Disruptive thruster technologies for telecom



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& constellations markets

14:30-14:45 Vincent JACOD, Airbus Defence & Space: Electric Propulsion Market Trend

14:45-15:00 Philippe LAMOTTE, Thales Alenia Space: TAS drivers towards electric propulsion versus satellites applications

15:00-15:15 Birk WOLLENHAUPT, OHB Systems: OHB's reflections about the first study phase

Satellite Operators (Chair: R. Pavone, SME4S)

15:15-15:30 David MOSTAZA-PRIETO, Hispasat: Hispasat and Electric Propulsion

15:30-15:45 Cosmo CASAREGOLA, Eutelsat: ELECTRIC PROPULSION: EUTELSAT STANDPOINT

15:45-16:00 Eric KRUCH, SES: SES Perspective on Electric Propulsion

Round table with LSI and Satellite Operators "Electric Propulsion in the telecom and constellations markets" (Chair: R. Pavone, SME4S; Rapporteur: J. Gonzalez Del Amo, ESA)

- 16:00-16:45**
- Vincent JACOD, Airbus Defence & Space
 - Philippe LAMOTTE, Thales Alenia Space
 - Markus PEUKERT, OHB Systems
 - Antonio ABAD, Hispasat
 - Cosmo CASAREGOLA, Eutelsat
 - Eric KRUCH, SES

16:45-17:15 Coffee break

Disruptive SRC Operational Grants (Chair: : N. Cox, UKSA)

17:15-17:45 Louis / Eric GRIMAUD / BRIDOT, Safran Electronics & Defense: GANOMIC: Disruptive technologies for PPU cost & volume efficiency

17:45-18:15 John STARK, Queen Mary Univ. of London: HIPERLOC-EP: Development of Electro spray Colloid Electric Propulsion as a low cost disruptive propulsion technology

18:15-18:45 Denis PACKAN, ONERA: MINOTOR H2020 project for ECR thruster development

18:45- 19:45 **Workshop cocktail**
Networking light cocktail



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AGENDA / FINAL PROGRAMME: WEDNESDAY 25TH OCTOBER 2017

08:30-09:00 Registration

09:00-09:15 Welcome of the day

Jorge LÓPEZ REIG, CDTI: Introduction, and organization logistics

Incremental Technologies PPUs (Chair: J. López Reig, CDTI)

09:15- 9:30

Fernando PINTÓ, Airbus Defence & Space: PPU activities in Airbus DS Space Equipment

09:30-9:45

Guillaume / Javier / Nicoletta GLORIEUX / PALENCIA / WAGNER, Airbus Defence & Space (FR / ES / DE): PPU developments for Incremental Technologies (HET / GIE / HEMPT) and common building blocks

09:45-10:00

Frédéric VARASTET, Safran Electronics & Defense: Safran PPU roadmap

10:00-10:15

Eric BOURGUIGNON, Thales Alenia Space Belgium: GEO Dual Mode PPU and LEO HEMPT PPU

10:15-10:45

Coffee break

Incremental Technologies (Chair: F.-X. Thibaut, BELSPO)

10:45-11:00

Farid INFED, ArianeGroup: Shape Memory Alloy Valve – New Technology for Telecom Satellite Applications

11:00-11:15

Michel POU CET, Bradford Engineering BV: Development of the Next-Generation Fluid Management Technologies for LEO, GEO & Navigation Satellites

11:15-11:30

Kevin HALL, QinetiQ: Development of a Ring Cusp high power thruster

11:30-11:45

Mariano ANDRENUCCI, SITAE S.p.A.: DEVELOPMENT OF A 20 kW CLASS HALL THRUSTER FOR SPACE TRANSPORTATION AND EXPLORATION

11:45-12:00

Daniele PAVARIN, University of Padua: Helicon research at University of Padua and T4i

12:00-12:15

Pablo FAJARDO, Universidad Carlos III Madrid: An advanced simulation code for Hall effect thrusters

12:15-12:30

Jochen SCHEIN, Universität der Bundeswehr/Transmit: RIT technology for space debris removal

12:30-13:15

Round table "Trends in Power Processing Units" (Chair: : M. Gollor, ESA)

- Eric BOURGUIGNON, Thales Alenia Space Belgium



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- Luca BENETTI, SITAEL S.p.A.
- Fernando PINTÓ, Airbus Defence & Space
- Alain DEMAIRÉ, OHB Sweden
- Matthias GOLLOR, ESA

13:15-14:15 Lunch break

Disruptive Thruster Technologies I (Chair: F. Castanet & C. Boniface, CNES)

- 14:15-14:30** Franz Georg HEY, Airbus Defence & Space: Electric Propulsion Opportunities for Future Scientific Explorations Missions
- 14:30-14:45** Alberto GARBAYO, AVS Added Value Solutions: Disruptive EP technologies at AVS
- 14:45-15:00** Georg HERDRICH, Baylor University/ Institut für Raumfahrtsysteme (IRS): Overview on IRS electric and advanced electric propulsion activities
- 15:00-15:15** Luc HERRERO, COMAT: Vacuum arc thruster development
- 15:15-15:30** Jean-Luc MARIA, EXOTRIL: Exotrail miniature HET for CubeSats

Disruptive Thruster Technologies II (Chair: J. López Reig, CDTI)

- 15:30-15:45** Christophe KOPPEL, KopooS Consulting Ind: Liquid PPT for attitude and orbit control of space vehicles
- 15:45-16:00** Francesco GUARDUCCI, Mars Space Ltd: EP Technologies Development at Mars Space Ltd
- 16:00-16:15** Mercedes RUIZ HARO, SENER: Development and tests of HPT-05
- 16:15-16:30** Ane AANESLAND, ThrustMe: Next generation ion thruster with imbedded neutralizaiton and propellant
- 16:30-16:45** Luis CONDE, Universidad Politécnica de Madrid: Development and current status of the ALPHIE (Alternative Low Power Ion Engine) plasma thruster

16:45-17:15 Coffee break

Disruptive Transversal Technologies (Chair: V. Pulcino, ASI)

- 17:15-17:30** Angel POST, Advanced Thermal Devices (ATD): C12A7:e- ELECTRIDE. A PROMISING MATERIAL FOR IONIC THUSTERS
- 17:30-17:45** Fabrizio SCORTECCI, AEROSPAZIO Tecnologie s.r.l.: Standardisation and Improvement of EP Diagnostics
- 17:45-18:00** Alexander REISSNER, ENPULSION: Industry 4.0 Meets Space - Establishing a production line for 100+ EP thruster per year
- 18:00-18:15** Marcelo COLLADO, ARQUIMEA: Shape Memory Alloy Technologies for Electric Propulsion Valves
- 18:15-18:30** Stephen GABRIEL, University of Southampton: Electric propulsion activities at the university of Southampton: Incremental and Disruptive

18:30- 18:50 Workshop Conclusions

Jorge LÓPEZ REIG, CDTI: EPIC Workshop facts and figures



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José GONZÁLEZ DEL AMO, ESA: EPIC Workshop conclusions

Day	Session	Time	Invited speaker			Presentation	
			Last name	First name	Company		
Tuesday 24th/October 2017	Registration	8:20-9:00					
	Welcome (Chair: CDTI)	9:00-9:15	Jorge	LOMBA	CDTI	CDTI Welcome, Inauguration Workshop	
		9:15-9:30	Jorge	LÓPEZ REIG	CDTI	Introduction, and organization logistics	
		9:30-9:50	José	GONZÁLEZ DEL AMO	ESA	PSA Welcome, and EPIC Workshop Objectives	
	Coffee break						
	H2020, EP SRC and PSA (Chair: ESA)	9:50-10:10	Tanja	ZEGERS	European Commission	H2020 and EP SRC, Next Work Programmes	
		10:10-10:30	Florence	BEROUD	REA	SRC activities and Operational Grants	
		10:30-10:40	José	GONZÁLEZ DEL AMO	ESA	EPIC PSA and activities	
	Coffee break						
	Incremental SRC Operational Grants (Chair: DLR)	11:15-11:55	Idris	HABBASSI	Safran Aircraft Engines	CHEOPS	
		11:55-12:35	Farid	INFED	ArianeGroup	GIESEPP: Solutions for current and future satellite electric propulsion needs – status and progress	
		12:35-13:15	Ernst	BOSCH	Thales Deutschland GmbH	HEMPT-NG – Development to provide European competitive EP solutions for future space missions	
	Lunch break						
			14:15-14:30	José	GONZÁLEZ DEL AMO	ESA	Disruptive thruster technologies for telecom & constellations markets
	Satellite Large System Integrators (Chair: Eurosace)		14:30-14:45	Vincent	JACOD	Airbus Defence & Space	
			14:45-15:00	Philippe / Steven / Massimiliano	LAMOTTE / AUSTIN / MARCOZZI	Thales Alenia Space	TAS drivers towards electric propulsion versus satellites applications & Electrical propulsion impact on future Earth observation and navigation missions
			15:00-15:15	Birk	WOLLENHAUPT	OHB Systems	OHB's reflections about the first study phase
	Satellite Operators (Chair: SME4S)		15:15-15:30	Antonio	ABAD	Hispasat	
			15:30-15:45	Cosmo	CASAREGOLA	Eutelsat	ELECTRIC PROPULSION: EUTELSAT STANDPOINT
			15:45-16:00	Eric	KRUCH	SES	SES Perspective on Electric Propulsion
	Round table with LSI and Satellite Operators "Electric Propulsion in the telecom and constellations markets" (Chair: SME4S, Rapporteur: ESA)		16:00-16:45	Vincent	JACOD	Airbus Defence & Space	
				Philippe	LAMOTTE	Thales Alenia Space	
				Markus	PEUKERT	OHB Systems	
				Antonio	ABAD	Hispasat	
				Cosmo	CASAREGOLA	Eutelsat	
				Eric	KRUCH	SES	
	Coffee break						
	Disruptive SRC Operational Grants (Chair: UKSA)		17:15-17:45	Louis / Eric	GRIMAUD / BRIDOT	Safran Electronics & Defense	GANOMIC: Disruptive technologies for PPU cost & volume efficiency
		17:45-18:15	John	STARK	Queen Mary Univ. of London	HIPERLOC-EP: Development of Electro spray Colloid Electric Propulsion as a low cost disruptive propulsion technology	
		18:15-18:45	Denis	PACKAN	ONERA	MINOTOR	
EOM (EO Day)							
		18:45					
Workshop cocktail							
		18:45-19:45	Networking light cocktail				



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Wednesday 25th/October 2017

Registration	8:30-9:00				
Welcome of the day	9:00-9:15	Jorge	LÓPEZ REIG	CDTI	Introduction, and organization logistics
Incremental Technologies PPU's (Chair: CDTI)	9:15-9:30	Fernando	PINTO	Airbus Defence & Space	PPU activities in Airbus DS Space Equipment
	9:30-9:45	Guillaume / Javier / Nicoletta	GLORIEUX / PALENCIA / WAGNER	Airbus Defence & Space (FR / ES / DE)	PPU developments for Incremental Technologies (HET / GIE / HEMPT) and common building blocks
	9:45-10:00	Frédéric	VARASTET	Safran Electronics & Defense	Safran PPU roadmap
	10:00-10:15	Eric	BOURGUIGNON	Thales Alenia Space Belgium	GEO Dual Mode PPU and LEO HEMPT PPU
Coffee break	10:15-10:45				
Incremental Technologies (Chair: BELSPO)	10:45-11:00	Farid	INFED	ArianeGroup	Shape Memory Alloy Valve – New Technology for Telecom Satellite Applications
	11:00-11:15	Michel	POUCET	Bradford Engineering BV	Development of the Next-Generation Fluid Management Technologies for LEO, GEO & Navigation Satellites
	11:15-11:30	Kevin	HALL	QinetiQ	Development of a Ring Cusp high power thruster
	11:30-11:45	Mariano	ANDRENUCCI	SITAE S.p.A.	DEVELOPMENT OF A 20 kW CLASS HALL THRUSTER FOR SPACE TRANSPORTATION AND EXPLORATION
	11:45-12:00	Daniele	PAVARIN	University of Padua	Helicon research at University of Padua and T4I
	12:00-12:15	Pablo	FAJARDO	Universidad Carlos III Madrid	An advanced simulation code for Hall effect thrusters
	12:15-12:30	Jochen	SCHEIN	Universität der Bundeswehr/Transmit	RIT technology for space debris removal
Round table "Trends in Power Processing Units" (Chair: ESA)	12:30-13:15	Eric	BOURGUIGNON	Thales Alenia Space Belgium	
		Luca	BENETTI	SITAE S.p.A.	
		Fernando	PINTO	Airbus Defence & Space	
		Alain	DEMAIRÉ	OHB Sweden	
		Matthias	GOLLOR	ESA	
Lunch break	13:15-14:15				
Disruptive Thruster Technologies I (Chair: CNES)	14:15-14:30	Franz Georg	HEY	Airbus Defence & Space	Electric Propulsion Opportunities for Future Scientific Explorations Missions
	14:30-14:45	Alberto	GARBAYO	AVS Added Value Solutions	Disruptive EP technologies at AVS
	14:45-15:00	Georg	HERDRICH	Baylor University/ Institut für Raumfahrtssysteme (IRS)	Overview on IRS electric and advanced electric propulsion activities
	15:00-15:15	Luc	HERRERO	COMAT	Vacuum arc thruster development
	15:15-15:30	Jean-Luc	MARIA	EXOTRAIL	Exotrail miniature HET for CubeSats
Disruptive Thruster Technologies II (Chair: CDTI)	15:30-15:45	Christophe	KOPPEL	KopooS Consulting Ind.	Liquid PPT for attitude and orbit control of space vehicles
	15:45-16:00	Francesco	GUARDUCCI	Mars Space Ltd	EP Technologies Development at Mars Space Ltd
	16:00-16:15	Mercedes	RUIZ HARO	SENER	Development and tests of HPT-05
	16:15-16:30	Ane	AANESLAND	ThrustMe	Next generation ion thruster with imbedded neutralization and propellant
	16:30-16:45	Luis	CONDE	Universidad Politécnica de Madrid	Development and current status of the ALPHIE (Alternative Low Power Ion Engine) plasma thruster
Coffee break	16:45-17:15				
Disruptive Transversal Technologies (Chair: ASI)	17:15-17:30	Angel	POST	Advanced Thermal Devices (ATD)	C12A7-e- ELECTRIDE. A PROMISING MATERIAL FOR IONIC THRUSTERS
	17:30-17:45	Fabrizio	SCORTECCI	AEROSPAZIO Tecnologie s.r.l.	Standardisation and Improvement of EP Diagnostics
	17:45-18:00	Alexander	REISSNER	ENPULSION	Industry 4.0 Meets Space - Establishing a production line for 100+ EP thruster per year.
	18:00-18:15	Marcelo	COLLADO	ARQUIMEA	Shape Memory Alloy Technologies for Electric Propulsion Valves
	18:15-18:30	Stephen	GABRIEL	University of Southampton	Electric propulsion activities at the university of Southampton: Incremental and Disruptive
Workshop Conclusions	18:30-18:45	José	GONZÁLEZ DEL AMO	ESA	EPIC Workshop conclusions
EOM (EO Workshop)	18:45				



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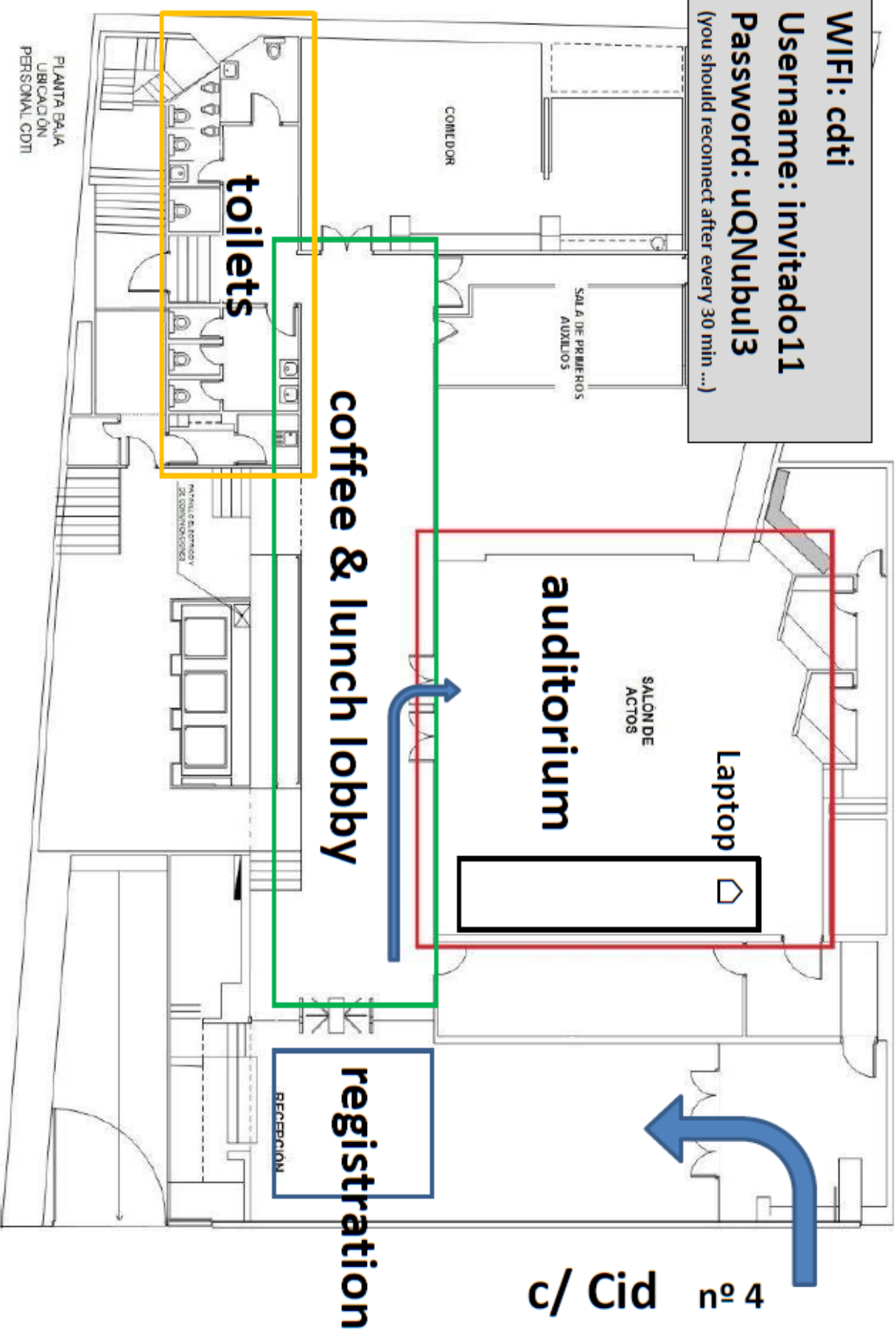
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EPIC Workshop 2017 venue

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