

# ITU Symposium and Workshop on small satellite regulation and communication systems

Prague, Czech Republic, 2-4 March 2015

## Programme

D-1 – Monday - 02.03.2015				
Time	Presentation title	Name	Company	Position
09:30-10:20	Welcome Opening	Mr. Eduard MURICKY	Ministry of Industry and Trade	Deputy Minister
		Dr. Vaclav KOBERA	Ministry of Transport	Head of Space Activities and Intelligent Transport Systems Dept.
		Mr. Jaromir NOVAK	Czech Telecommunication Office	Chairman of the Council of the Czech Telecommunication Office
	Czech Technical University welcome	Prof. Pavel RIPKA	Czech Technical University	Dean of the Faculty of Electrical Engineering of the Czech Technical University in Prague
	ITU Radiocommunication Bureau welcome	Mr. Yvon HENRI	ITU BR	Chief SSD
	ITU Academia welcome	Prof. Boris SIMAK	FEL CVUT	Head of Communication department & ITU Academia representation
	<i>Key Note Speech</i> Sustainable development of small satellite systems	Prof. Kai-Uwe SCHROGL	ESA	UN COPUOS LSC Chair
10:20-10:50	Small satellite Exhibition opening and Coffee break			
10:50-12:30	Intro to ITU-R and ITU Academia activity	Mr. Joaquin RESTREPO	ITU BR	Head OPS
	The ITU - Challenges in the 21st century related to SMALL SATELLITES	Mr. Yvon HENRI (YH)	ITU BR	Chief SSD
	De-mystifying Articles of the RR related to SMALL SATELLITES	Mr. Attila MATAS (AM)	ITU BR	Head SPR
	Q/A	YH+AM	ITU BR	.
12:30-14:00	Lunch break			
14:00-14:20	The Outer Space Legal Regime and UN Register of Space Objects	Mr. Niklas HEDMAN	UN OOSA	Chief Committee, Policy and Legal Affairs Section
14:20-14:40	Authorization of Small Satellites under National Space Legislation	Prof. Tanja MASSON-ZWAAN	IISL	President
14:40-15:40	National legislation/regulation applicable to small-satellite round-table between regulators, developers and industry	TBD ADM of HOL, FIN, UK, BRITE, Planet Labs	.	.
15:40-16:00	Coffee break			
16:00-16:15	Czech space instruments and satellites	Mr. Jan KOLAR	CzechSpace office	Director
16:15-16:30	A Review of Current NASA Ames Small Satellite Programs	Mr. Roger HUNTER	NASA Ames center	Program Manager
16:30-16:45	ESA Small satellite programme	Mr. Piero GALEONE	ESA	Head of the Tertiary Education Unit, Educ.& Knowledge Management Off.
16:45-17:05	IARU amateur-satellite coordination process	Mr. Ole GARPESTAD	IARU	Vice President
17:05-17:40	Status of ITU-R studies related to small-satellites (RES-757 WRC-12)	Mr. Wouter Jan UBBELS Mr. Martin BUSCHER	ISIS TU Berlin	RF Systems Engineer Research Chair of Space Tech.
17:40-18:30	Small-satellite operators experience <i>Poster session</i>	Mr. Joaquin RESTREPO	ITU BR	Head OPS
	BRITE	Prof. Otto KOUDELKA	TU GRAZ	Head of the Institute of Satellite Communications
	IARU	Mr. Ole GARPESTAD	IARU	Vice President
	Lobster Eye telescopes as scientific payload for small satellites	Dr. Rene HUDEC Mr. Vladimir TICHY Mr. Vojtech SIMON	ASU AV CR Ondrejov & FEE CTU Prague	Researcher
	OP-SAT	Prof. Otto KOUDELKA	TU GRAZ	Head of the Institute of Satellite Communications
Social Programme				

**D-2 – Tuesday - 03.03.2015**

**Small-satellite technology and experience in application of the ITU Radio Regulations**

Time	Presentation title	Name	Company	Position
09:00-09:20	<b>Key Note speech</b> Small Satellites – changing the economics of space	Mr. Luis GOMES	SSTL	Director of EO and Science
09:20-09:35	Satellite Architecture (orbits, constellations) and Technologies	Dr. Vladimir AGAPOV	Keldysh Institute	Senior Researcher
09:35-09:50	De-orbiting and Space debris	Dr. Manfred WITTIG	MEW-Aerospace UG	CEO
09:50-10:05	Ensuring regulatory compliance for small satellites by grant and procurement conditions	Dr. Ingo BAUMANN	BHO Legal	Partner/Senior Legal Advisor
10:05-10:20	Setting the scene: enabling small satellites to utilize their full potential	Mr. Wouter Jan UBBELS	ISIS	RF systems engineering & spectrum management
10:20-10:40	Coffee break			
10:40-11:00	<b>Key Note speech</b> Small Sats present and future	Prof. Jordi PUIG-SUARI	CalPoly	Head Aerospace Engineering Department
11:00-11:15	BRITE constellation – case study	Prof. Otto KOUDELKA	TU Graz	Head of the Institute of Satellite Communications
11:15-11:30	MASAT-1 – case study	Mr. Levente DUDAS	BME	MASAT system engineer
11:30-11:45	Experience on ITU Radio Regulatory procedures for small-satellites AALTO-1	Mr. Pauli HUUHKA	FICORA	Radio network specialist
11:45-12:00	AKOS endeavor in small satellite filing/notification	Mag. Tomo ZBONTAR	AKOS	Advisor
12:00-12:15	QB50 status and the ground segment	Mr. Thorsten SCHOLZ	VKI	QB50 Ground segment and frequency coordinator
12:15-12:30	CzechTechSat Project Development	Mr. Jaroslav LAIFR	FEE CTU Prague	CzechTechSat Team Leader
12:30 – 12:45	VZLUSAT1 first Czech 2U Cubesat for IOD's	Mr. Vladimir DANIEL	VZLU	Project Manager
12:45-14:00	Lunch break			
14:00-14:15	Exponential Improvements in Nano-satellite Technology	Ms. Jenny BARNA	SPIRE	Launch Manager
14:15-14:30	Small satellites missions from the French space agency (CNES) and application of the ITU Radio Regulations	Mr. Jean PLA	CNES	Expert in frequency management for space scientific missions
14:30-14:45	Overview of the Planet Labs Constellation of Earth Imaging Satellites	Mr. Mike SAFYAN	Planet Labs	Director of Launch and Regulatory Affairs
14:45-15:00	Preliminary noise measurements campaign carried out by HUMSAT-D during 2014	Prof. Fernando AGUADO	UNI VIGO	Head of the Aerospace Strategic Research Group
15:00-15:20	Small satellite TT&C and Earth stations regulatory provisions	Mr. Attila MATAS	ITU BR	Head SPR
15:20-15:35	Designing a turnkey, evolutive and flexible ground segment based on software defined radios for SmallSats missions	Mr. Mathieu RIEDINGER	Zodiac AeroSpace	Sales Engineer & Marketing Manager
15:35-15:50	An industrial perspective on small satellite ground station operations and regulations	Mr. Jan SCHULTE	KSAT	Sales Manager
15:50-16:10	Coffee break			
<b>Advance Future Small Satellite Systems</b>				
16:10-16:25	System architecture of inter-satellite communication mission S-Net	Dr. Zizung YOON	TU-Berlin	Research fellow
16:25-16:40	Small satellite developments in ESA Telecom	Mr. Frank ZEPPEFELDT	ESA Satellite Communications	Future Programs
16:40-16:50	OPS-SAT Nanosatellite Mission	Prof. Otto KOUDELKA	TU Graz	Head of the Institute of Satellite Communications
16:50-17:05	A case for space radar	Mr. Dominique BOVEY	HES-SO HEIG-VD	Senior Scientist

**D-2 – Tuesday - 03.03.2015**

Time	Presentation title	Name	Company	Position
17:05-17:20	Satellites, Space and Security Earth Observation Satellite Systems and Technology for civilian and governmental purposes	DI Dr. Norbert FRISCHAUF	OWF-ALPHA Austria SpaceTecPartners	Partner
17:20-17:35	GomSpace: use of communications systems now and in the future	Mr. Jacob Mølbach NISSEN	GomSpace	CTO
17:35-17:50	On masse, on demand, on orbit: Interplane- tary Pocket Spacecraft licensing and regula- tory challenges	Mr. Michael JOHNSON	PocketSpacecraft	CEO
17:50-18:00	Es'hail-2 Satellite AMSAT Payload	ESHAILSAT	ESHAILSAT	.
18:00	Closing Remarks	Mr. Francois RANCY	ITU BR	Director

**D-3 – Wednesday - 04.03.2015**

**WORKSHOP - Small-satellite technology and experience in application of the ITU Radio Regulations**

09:00-12:00	Receivability of space notices and cost recovery	Mr. Attila MATAS (AM)	ITU BR	Head SPR
	Interactive session: ITU-R Space web Preface & S data			
	Preparation of electronic submission – Ad- vance publication information (API) using BR software package (SpaceCap, SpaceVal, SpaceQry and SpacePub)			
	Comments on API/A publication using Space- Com & API/B publication			
	Notification and recording of frequency as- signments in the Space MIFR	Mr. Yvon HENRI (YH)	ITU BR	Chief SSD
	ITU-R regulatory assistance and Harmful Interference procedures			
12:00-12:30	Final Q/A	YH & AM	ITU BR	.
12:30-14:00	Lunch break			
14:00-15:30	Small-satellite link budget calculation and engineering	Prof. Otto KOUDELKA	TU Graz	Head of the Institute of Satellite Communications
15:30-15:45	Coffee break			
15:45-17:00	Small-satellite RD and Earth station technolo- gy excursion	Prof. Boris SIMAK	FEE CTU	Head of Communication department & ITU Academia representation