

Tuesday 25th October 2016

0930 – 0945 ***Introduction***

0945 – 1035 ***Keynote Speakers***

Tadayuki Takahashi, ISAS/JAXA, Professor
Presentation – SpaceWire Activity in Japan 2016

Hiroki Hihara, NEC Space Technologies Ltd, Senior Manager, Advanced Technologist
Presentation – Scalable Interconnection with SpaceWire

1035 - 1105 ***Missions & Applications (Short Papers)***
Session Chair, Masaharu Nomachi, University of Osaka

(42) Susan C. Clancy, Mazen Shihabi; USING SPACEWIRE TIME CODES FOR SPACECRAFT TIME SYNCHRONIZATION

(40) Joseph R Marshall; MATURATION OF A SCALABLE FORM FACTOR SYSTEM STANDARD FOR INTEROPERABLE SPACEBORNE PROCESSING AND INTERCONNECT NEEDS

1135 -1250 ***SpaceFibre 1 (Long Papers)***
Session Chair, Dirk Thurnes, ESA

(70) Ronald T. Logan Jr; RUGGEDIZED PHOTONIC TRANSCEIVERS FOR SPACECRAFT DATALINKS

(64) Steve Parkes, Chris McClements, David McLaren, Albert Ferrer Florit, Alberto Gonzalez Villafranca; SPACEFIBRE NETWORKS

(60) Stephen Mudie, Steve Parkes; SPACEFIBRE LINK ANALYSIS

1405 -1520 ***Networks & Protocols (Short Papers)***
Session Chair, Brice Dellandrea, Thales Alenia Space

(59) Piotr Tyczka, Krzysztof Romanowski, Wojciech Mich, Rafal Renk, Vangelis D. Kollias, Nikos Pogkas; IMPLEMENTATION AND VALIDATION OF THE SPACEWIRE-R PROTOCOL

(58) Piotr Tyczka, Krzysztof Romanowski, Witold Holubowicz, Rafal Renk, Vangelis D. Kollias, Nikos Pogkas; SPACEWIRE NETWORK MANAGEMENT USING NETWORK DISCOVERY AND CONFIGURATION PROTOCOL

(21) Satoshi Yamazaki, Toshio Tonouchi, Yu Otake, Yasuhiro Sota, Takahiko Tanaka, Hiroki Hihara; CONSTRAINT-BASED CONFIGURATION TABLE GENERATOR FOR RELIABLE PATH ROUTING AND SAFE TIMESLOT ALLOCATION IN SPACEWIRE NETWORK

(5) Michael Birmingham, William H, Anderson, Alexander Krimchansky, Matthew S. Lombardi; ESSENTIAL SPACEWIRE HARDWARE CAPABILITIES FOR A ROBUST NETWORK

(34) Alexander Kisin, Glenn Parker Rakow; NEW APPROACHES FOR DC BALANCED SPACEWIRE

1545 – 1730 ***Components (Short Papers)***
Session Chair, Giorgio Magistrati, ESA

(31) Hiroki Hihara, Nobuo Tamagawa, Takayuki Imamura, Hisashi Sugaya, Kazutoshi Wakabayashi, Tadahiko Sugibayashi, Makoto Miyamura, Toshitsugu Sakamoto, Munehiro

- Tada, Hiromitsu Hada, Akira Iwasaki; PROGRAMMABLE SPACEWIRE INTERFACE WITH ATOM SWITCH
- (29) Sandi Habinc, Magnus Hjorth, Javier Jalle, Felix Siegle, Jan Andersson, Roland Weigand; SPACEWIRE ROUTER (GR740) VALIDATION METHODOLOGY AND RESULTS
- (18) Takanori Narita, Masahiro Taeda, Masahiro Kato, Masaki Kusano, Kazunori Masukawa, Takayuki Ishida, Seisuke Fukuda, Keiichi Matsuzaki, Tadayuki Takahashi, Mutsutaka Takada, Hiroaki Takada, Masaharu Nomachi; HIGH-RELIABILITY SPACEWIRE ENGINE IMPLEMENTED ON SOISOC3 MICROPROCESSOR
- (41) Takayuki Ishida, Seisuke Fukuda, Keiichi Matsuzaki, Tadayuki Takahashi, Mitsutaka Takada, Hiroaki Takada, Masaharu Nomachi, Takanori Narita, Masahiro Taeda, Kazunori Masukawa, Keigo Saso; SOFTWARE AND SPACEWIRE EVALUATION OF SOI-SOC3
- (44) G. Bateria, A. Senior, Y. Moghe; GALVANIC ISOLATION OF SPACEWIRE RECEIVERS
- (67) Dmitri Skok, Tatiana Solokhina, Jaroslav Petrichkovich, Juri Gerasimov; 90NM 12.5 GBIT/S SPACEFIBRE/GIGASPACEWIRE BASED PHYSICAL INTERFACE FOR THE SPACE RADARS SOC
- (37) Mitsunobu Kuribayashi, Hiroki Hihara, Seisuke Fukuda, Takayuki Ishida, Takahiko Tanaka, Osamu Watanabe, Masanori Matsuo, Hiroshi Matsushima, Koichi Shinozaki, Toshiyuki Yamada; INNOVATIVE MINIATURIZATION FOR LOW RESOURCE INTERPLANETARY EXPLORATION
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Wednesday 26th October 2016

0915 - 1055 *Missions & Applications (Long Papers)*

Session Chair, Seisuke Fukuda, ISAS/JAXA

- (30) Felix Siegle, Martin Aberg, Daniel Hellström, Arne Samuelsson, Sandi Habinc, Felice Torelli; COMMON SPACEWIRE SOFTWARE FOR ESA JUICE INSTRUMENT PAYLOADS
- (48) Olivier Notebaert, Giuseppe Montano, Elie Allouis, Thierry Planche, Clément Pruvost, Andreas Schüttauf, Hans-Juergen Herpel, Christophe Honvault, David Jameux; TOWARDS SPACEWIRE 2: SPACE ROBOTICS NEEDS
- (32) James Windsor, Wahida Gasti, Ignacio Clerigo; BEPICOLUMBO – BUILDING A ROBUST DATA MANAGEMENT SUBSYSTEM UTILISING SPACEWIRE NETWORKS
- (39) Joseph R Marshall; SPACEWIRE FABRIC USED TO CONTROL FAMILY OF STANDARDIZED HIGH PERFORMANCE SPACEVPX MODULES
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1130 - 1145 *Test & Verification (Short Papers)*

Session Chair, Alex Kisin, NASA

- (57) Brice Dellandrea, Alexandre Dimitriou, David Jameux; MOST:MODELING OF SPACEWIRE & SPACEFIBRE TRAFFIC
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1145 – 1230 *SpaceFibre (Short Papers)*

Session Chair, Irina Lavrovskaya, Saint Petersburg State University of Aerospace Instrumentation

- (27) Felix Siegle, Sandi Habinc, Kostas Marinis; SPACEFIBRE AND SERIAL RAPIDIO NETWORK LAYERS (GRSPFI/ GRSRIO)
- (54) Daniele Davalle, Alessandro Leoni, Luca Dello Sterpaio, Luca Fanucci; DESIGN AND IMPLEMENTATION OF TEST EQUIPMENT FOR SPACEFIBRE LINKS

- (66) Alberto Gonzalez-Villafranca, Steve Parkes, Albert Ferrer-Florit, Chris McClements; A NEW GENERATION OF SPACEFIBRE TEST AND DEVELOPMENT EQUIPMENT
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1345 – 1550 *Networks & Protocols 1 (Long Papers)*
Session Chair, Albert Ferrer-Florit, STAR-Dundee Ltd

- (4) Michael Birmingham, William H. Anderson, Alexander Krimchansky, Matthew S. Lombardi; THE GEOSTATIONARY OPERATIONAL SATELLITE R SERIES SPACEWIRE BASED DATA SYSTEM
- (14) Valentin Olenev, Ilya Korobkov, Elena Suvorova, Yuriy Sheynin; STREAMING SERVICES OVER SPACEFIBRE NETWORKS
- (15) Irina Lavrovskaya, Valentin Olenev, Elenev Podgornova, Yuriy Sheynin; DETERMINISTIC SERVICES FOR SPACEWIRE NETWORKS
- (35) Elena Suvorova, Ksenia Rozhdestvenskaya, Nadezhda Matveeva, Lev Kurbanov, Aleksey Evdokimov, Yuriy Sheynin, Aleksey Rabin; PLACEMENT OF PLUG-AND-PLAY NETWORK MANAGERS IN SPACEWIRE NETWORKS
- (49) Ting Peng, Benjamin Weps, Kai Borchers, Daniel Lütcke, Kilian Höflinger, Andreas Gerndt; A NEW SPACEWIRE PROTOCOL FOR RECONFIGURABLE DISTRIBUTED ON-BOARD COMPUTERS
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1550 – 1700 **Poster Presentations**

Thursday 27th October 2016

0915 - 1030 *Components (Long Papers)*
Session Chair, Olivier Notebaert, Astrium SAS

- (51) Kevin Enouf, Stéphane Hermant, Florent Mettendorff; COMPACT, IMPEDANCE-MATCHED SPACEWIRE CONNECTOR DEVELOPMENT
- (28) S. Habinc, F. Johansson, F. Sturesson, F. Hernandez, F. Siegle, S. Redant, K. Stinkens, G. Thys J. Das Arul Mahesh, Martin Suess, Rok Dittrich; RADIATION-TOLERANT 18X SPACEWIRE ROUTER FOR SPACE APPLICATIONS (GR718B)
- (12) Brice Dellandrea, Antonis Tavoularis, Vassilis Vlagkoulis, Fotis Kostopoulos, Tam Le Ngoc, Luca Fossati, Jorgen Iltad, David Jameux; AN IP CORE FOR THE SPW FAMILY OF PROTOCOLS
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1100 - 1240 *Networks & Protocols 2 (Long Papers)*
Session Chair, Minoru Nakamura, Mitsubishi Electric

- (2) Thomas Bahls, Alin O. Albu-Schäffer; A GRAPHICAL METHOD TO CONFIGURE SPACEWIRE NETWORKS
- (19) Irina Lavrovskaya, Yuriy Sheynin, Valentin Olenev; MULTICHANNEL ADAPTIVE ROUTING FOR INTENSIVE DATA PACKET FLOWS TRANSMISSION
- (56) David Gibson, Steve Parkes, Chris McClements, Stuart Mills; SPACEWIRE-D PROTOTYPE AND DEMONSTRATION SYSTEM
- (20) Elena Suvorova, Nadezhda Matveeva, Yuriy Sheynin; QOS MECHANISMS IN SPACEFIBRE AND RAPID IO
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1355 - 1510

SpaceFibre 2 (Long Papers)
Session Chair, Joseph Marshall, BAE Systems

- (61) Albert Ferrer-Florit, Steve Parkes, Alberto Gonzalez-Villafranca, Chris McClements; SPACEFIBRE MULTI-LANE
- (65) Steve Parkes, Chris McClements, David McLaren, Albert Ferrer-Florit, Alberto Gonzalez-Villafranca; SPACEFIBRE FLIGHT EQUIPMENT
- (50) Alexey Khakhulin, Valentin Olenev, Igor Orlovsky, Yuriy Sheynin, Ilya Korobkov, Elena Suvorova, Irina Lavrovskaya; SPACEFIBRE BASED ON-BOARD NETWORKS FOR REAL-TIME VIDEO DATA STREAMS
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1540 - 1655

Test & Verification (Long Papers)
Session Chair, Hiroki Hihara, NEC

- (25) Giorgio Magistrati, Norbert Bonnici, Wahida Gasti, Farid Guettache, Jorgen Ilstad, James Windsor; HOW TO DESIGN, TEST AND VERIFY THE PHYSICAL LAYER OF SPW NETWORKS
- (63) Stuart Mills, Chris McClements, Bruce Yu, Steve Parkes; A NEW GENERATION OF SPACEWIRE TEST AND DEVELOPMENT EQUIPMENT
- (16) Valentin Olenev, Irina Lavrovskaya, Nadezhda Chumakova, Dmitry Dymov, Vadim Shkolniy, Sergey Kochura; SOFTWARE-TO-HARDWARE TESTER FOR SPACEWIRE ORIENTATED TRANSPORT PROTOCOLS

Poster Presentations

- (3) Yi Xiao Su, Tao Cong Ling, Zeng Hua Song, Liu Wen Li; DESIGN AND ANALYSIS OF SPACEWIRE HOT BACKUP REDUNDANT NETWORK
- (6) Giorgio Magistrati, Felice Torelli, Jørgen Ilstad; JUICE TIME DISTRIBUTION PROTOCOL
- (7) Niu Yuehua, Liu Weiwei, Li Xin, Mu Qiang, Wang Luyuan; DISTRIBUTED STORAGE SYSTEM FOR SATELLITE PLATFORM BASED ON SPACEWIRE NETWORK
- (10) Michiya Hayama, Hiroto Namikoshi, Isao Odagi; FDIR METHOD USING AN EMBEDDED TIMECODE IN PACKETS FOR SPACEWIRE-D
- (11) Alfonso Gonzalo Palomo; GENERIC ICU – A FAMILY OF ICUs FOR METOP-SG INSTRUMENTS
- (17) Liu Weiwei, Niu Yuehua, Cheng Bowen, Wang Luyuan; DETERMINISTIC COMMUNICATION AND DISTRIBUTED CONTROL OF AVIONICS BASED ON SPACEWIRE-D
- (24) Giuseppe Montano, Marek Rucinski, Elie Allouis, Olivier Notebaert, David Jameux; NETWORK LATENCY ANALYSIS OF A SPACEWIRE-BASED CONTROL SYSTEM FOR SPACE ROBOTIC ARM
- (26) Felix Siegle, Sandi Habinc, Johannes Both; SPACEFIBRE PORT IP CORE (GRSPFI)
- (33) Elena Suvorova, Liudmila Koblyakova, Yuriy Sheynin; SYNCHRONIZATION OF DISTRIBUTED INTERRUPTS DELIVERY IN AEROSPACE ONBOARD NETWORKS
- (36) Hiroshi Itakura, Yoshihiro Akeboshi, Hirotoshi Yamada, Hisashi Yoshiko, Satoshi Ichikawa, Atsutake Kosuge, Masashi Haraguchi, Tadahiro Kuroda; BASIC STUDY OF NON-CONTACT CONNECTOR FOR HIGH-SPEED SPACE CABLE TRANSMISSION
- (38) Joseph R Marshall; HIGH PERFORMANCE NETWORK COMPONENTS FOR SCALABLE SPACEBORNE PROCESSING NEEDS
- (43) Iwao Fujishiro, Shigeyuki Arase, Masaharu Nomachi, Soichiro Mihara, Kenji Sasaki; SPACEWIRE TEST CENTRE IN JAPAN
- (45) Takeshi Takashima, Emilo Ogawa, Mitsuru Hikishima, Kazushi Asamura; A NEW MISSION DATA RECORDER (MDR) WITH TIME-SEARCH FUNCTION FOR ERG MISSION SYSTEM
- (46) Takeshi Takashima, Yosuke Nakamura, Emiko Ogawa; SPACEWIRE NETWORKING SYSTEM FOR PAYLOADS ONBOARD ERG SATELLITE
- (47) Takeshi Takashima, Seisuke Fukuda; DEVELOPMENT OF REAL-TIME AND HIGH-SPEED SPACEWIRE DATA TRANSFER SYSTEM
- (53) Mattavelli Marco, Brice Dellandrea, Gianluca Aranci, Nans Douay, Wahida Gasti, Giorgio Magistrati, Johannes Wolf; SPACEWIRE ELECTRICAL TESTING
- (55) Philippe Plasson, Rafael Corsi Ferrão, Sergio Ribeiro Augusto, Cássio Berni, Franklin Ronald Ferreira dos Santos e Vanderlei Cunha Parro, Loic Gueguen, Saulo Finco, Gisbert Peter, Manfred Steller; MULTI-PURPOSE SIMULATOR FOR PLATO MISSION
- (68) Tatiana Solokhina, Jaroslav Petrichkovich, Alexander Glushkov, Andrey Belyaev, Leonid Menshenin, Yuriy Sheynin, Elena Suvorova; RADIATION TOLERANT HETEROGENEOUS MULTICORE “SYSTEM ON CHIP” WITH BUILT-IN MULTICHANNEL SPACEFIBRE SWITCH FOR ONBOARD DATA MANAGEMENT AND MASS STORAGE DEVICE
- (69) Dan Ohlsson, Henrik Löfgren, Emil Vinterhav, Stefan Stralsjö; ENABLING ADVANCED MISSIONS ON SMALL PLATFORMS THROUGH DESIGNING COST EFFECTIVE SPACEWIRE-BASED AVIONICS SOLUTIONS IN THE CUBESAT FORM FACTOR