November 2017

Certification News

5G GCF starts work on framework for 5G device certification page 2

SG RSP, RCS, VoLTE, among new Work Items approved in Steering Group page 2

GCF creates dedicated IoT working group

GCF has established a dedicated working group to focus on the testing and certification requirements for 'Internet of Things' (IoT) devices and applications that make use of mobile connectivity.

GCF's new IoT Agreement Group (IAG) will supplement the work of CAG by developing and maintaining certification criteria and testing procedures that will give confidence to device manufacturers and application developers that their products and services will connect effectively over secure, operator-managed spectrum to deliver great benefits to customers.

Involving disciplines such as sensing, cloud computing, analytics, data cleansing, data processing, systems integration and IP security, and demanding new approaches to device management, service provisioning and quality, the IoT ecosystem is very different from the handset market that GCF has been supporting since 1999.

One of the first steps for IAG will be to investigate how IoT device certification needs to integrate with application-layer standards from organisations such as OMA and oneM2M. As well as working closely with these bodies and IoT-related groups within GSMA, the new Agreement Group will engage with industry organisations dedicated to promoting IoT in various vertical markets, including the automotive industry.

"GCF is keen to engage with manufacturers, developers and technology providers beyond GCF's traditional membership and encourage them to bring their experience and insight into the IoT Agreement Group," said Lars Nielsen, GCF General Manager.

See SG article on page 3 for news of the latest IoT Work Items.

GCF accelerates connected vehicle activity

Connected concept car on show at a recent MWC

Massive global investment by the automotive sector in connected and autonomous vehicles is creating new demands for automotive communications technologies. Enabling vehicles to communicate with the internet, other vehicles, the road infrastructure, other road users and pedestrians opens up opportunities to benefit

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GCF to certify GSMA Remote SIM Provisioning

GCF is to offer certification of Remote SIM Provisioning (RSP) for consumer devices, a move that will drive remote provisioning features in smartphones. The adoption of RSP will be the catalyst for a new wave of connected and wearable companion devices putting the consumer in charge of network choice.

The RSP specification developed by GSMA has the support of device manufacturers and mobile operators worldwide. By allowing a SIM to be provisioned over-the-air, users can select their own service provider independently of the device. Operators can simplify their supply chain, and move subscription management online. Access to a global RSP specification means OEMs may not need to produce a different device for each operator and may be able to bring devices to market more quickly.

Working closely with GSMA, GCF is also developing a stand-alone certification process, alongside the 'core' scheme, that will enable any OEM – whether a GCF member or not - to certify that GSMA RSP has been correctly implemented in their consumer devices. This new stand-alone RSP certification scheme is expected to be ready for launch by the start of 2018 and will be offered to the whole industry without any GCF membership requirement.

To facilitate stand-alone certification of RSP by non-members, GCF is building a new certification website.

For further information on stand-alone RSP certification contact the GCF Office.

Please Share! Feel free to share this newsletter with colleagues, customers, suppliers or partners involved in the design, manufacturer, testing, procurement or use of mobile devices

Steering Group approves new Work Items for RSP, RCS, VoLTE, High Speed Trains & more

Since the August issue of Certification News, GCF's Steering Group (SG) has approved new Work Items that bring new functionality into certification or update existing certification requirements.

Roy Church (left) and Tim Evans, Chair and Vice-Chair respectively, manage the busy agenda at SG#72. The meeting was hosted by Intel, a GCF Manufacturer Member, at Tigard, Oregon, US in September.

RSP Enhanced Features

Complementing GCF's current focus on Remote SIM Provisioning, Steering Group approved a Work Item that will enable manufacturers to demonstrate compliance with enhanced Local Profile Assistant (LPAd) features in consumer devices. The tests will cover usage of the Subscription Manager Discovery Servers (SM-DS) and eSIM Memory reset function.

RCS Universal Profile 1.0

GSMA's Universal Profile (UP 1.0) is an industry-agreed set of features and technical enablers developed to simplify operator deployment of advanced messaging services.

RCS UP 1.0 enables the industry to deliver a consistent and more advanced messaging experience for 6.7 billion consumers worldwide. Core features include chat, group chat, file transfer, audio messaging, video share, multi-device, enriched calling, location share and live sketching.

GCF is introducing Field Trial testing to support deployment of RCS UP 1.0 by a number of operators and their device partners who are integrating the feature as a native application.

Converged IP Communications

In its NG.102 Permanent Reference Document GSMA has identified a minimum set of common IMS functionalities that should be supported to guarantee interoperable, high quality operator-provided, IMS-based Converged IP Communications Services. SG approved a Work Item that will allow the conformance testing of these functionalities, which are defined in 3GPP specifications and GSMA PRDs.

Enhanced High Speed Trains

High Speed Train services capable of travelling at speeds between 300km/h and 350km/h are already extensively used or being planned in many countries.

Doppler shift, which occurs at high speeds, can impact the performance of mobile devices and affect the user experience. In Release 14, 3GPP introduced a performance enhancement (eHST) which will guarantee the experience of LTE users travelling on High Speed Trains. Conformance testing of eHST will be brought within certification as soon as the required test cases are finalised by 3GPP.

Positioning

New conformance testing Work Items will improve the test coverage of two Release 12 positioning functionalities that can be used as the foundation for location-based services.

OTDOA, or Observed Time Difference of Arrival, calculates location based on the differences between the reception of signals from different base stations.

Enhanced Cell-ID (E-CID) makes use of the serving cell ID, differences between transmit and receive times and the IDs, estimated power and timing differences of neighbouring cells to determine location.

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GCF gears up for 5G

In its roadmap to 5G, 3GPP anticipates finalizing a "non-standalone" (NSA) 5G mode for enhanced mobile broadband (eMBB) use-cases by March 2018. A "standalone" (SA) new radio (NR) will be standardized by September 2018. Non-standalone mode will leverage LTE connections and complement them with 5G NR carriers to boost data-rates and reduce latency.

Initial estimates suggest that nearly 600 test cases will be required for the NSA and SA new radio elements of 5G that will be defined in 3GPP Release 15.

These test cases will need to be written in TTCN, the programming language which is the de facto standard globally for writing protocol test cases.

GCF has offered to contribute up to €156,000 towards the cost of developing the required TTCN test cases during 2018: this will help ensure that 5G device certification is available in time to support early standards-compliant deployments of 5G from late 2018 / early 2019.

Building on experience gained from the successful introduction of certification for technologies such as 3G, HSPA+ and LTE, GCF is starting to formally define its certification framework for 5G. Four main classes of testing have been identified for 5G certification: Protocol, Radio Resource Management (RRM), Radio Frequency (RF) and Positioning.

Membership Matters

GCF welcomes the following companies who have become members since the last edition of Certification News:

Associate Operators

- Linkem, Italy
- Telecom R&D, Malaysia

Manufacturers

- Datalogic, Italy
- Sercomm, Taiwan
- Wileyfox, UK

Associate Manufacturers

- Flextronics Canada Design Services, Canada
- Great Talent Technology, China
- PsiControl, Belgium
- Reliance Communications, USA

Observers

- TEOCO, USA

Total membership was 315 as at SG#72.

Steering Group approves new Work Items

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Enhanced VoLTE and ViLTE

With growing demand for high-quality voice and video services, Voice over LTE (VoLTE) and Video over LTE (ViLTE) have been deployed by operators all over the world.

Release 14 included voice and video enhancements including network-assisted codec selection and adaptation, signalling optimization and quality/coverage enhancement. Combined, these features will deliver improved VoLTE/ViLTE experiences for users.

A new Work Item will pave the way for conformance testing of eVoLTE when the relevant test specs are released by 3GPP in November.

IoT

To meet market demand, NB-IoT has been updated in Release 14 to introduce enhanced mobility and service continuity, E-CID and OTDOA positioning, multicast capabilities (to facilitate software and firmware updates), latency reduction and lower power consumption. A new Work Item will introduce conformance testing for the enhanced functionality.

Release 14 also included enhancements for LTE Cat M1which included positioning, multicast, mobility improvements, higher data rates - above 1 Mbps – and improved VoLTE capabilities. GCF's new work item will include RF, RRM and protocol conformance test cases.

A Work Item relating to "Further LTE Physical Layer Enhancements for MTC" from Release 13 and the GSMA NG.108 IMS profile for Voice and SMS was also approved. This will enable the certification of Voice and SMS via IMS – both of which have been identified as important features for LTE Cat M1 devices.

Photo: Ignacio Eliseo Barandalla

Delegates at SG#71 held in Shanghai. The meeting was hosted by TA Technology, a GCF Observer Member whose headquarters is in the Chinese city.

Indoor Positioning

OMA LPP extensions (LPPe) build on 3GPP LTE Positioning Protocol (LPP) to provide enhanced indoor positioning functionality where satellite coverage is typically limited or non-existent. OMA's LPP extensions exploit Wi-Fi and Bluetooth signals to augment LTE positioning techniques and are capable of providing a high accuracy 3D location. The ability to test and certify OMA LPPe will be of particular interest in the USA where the FCC has stipulated accuracy requirements for location services.

After approval, Work Items pass to the relevant Agreement Groups where more detailed Work Item Descriptions (WIDs) are developed. WIDs for RSP enhanced features and Rel 12 Positioning were approved at CAG#51. eHST, eVoLTE and LPPe indoor positioning WIDs were approved at CAG#52.

Connected vehicles

from p1

wider society: making roads safer and reducing congestion will improve the flow of people and goods, reducing costs and creating economic efficiencies while cutting pollution.

"LTE sidelink", an adaptation of the core LTE standards, was defined by 3GPP in Release 14 to support vehicle-to-vehicle (V2V) and vehicle-to-everything (V2X) use cases. The functionality can also be used in conjunction with conventional LTE connections to mobile networks to open up a wide variety of innovative connected car services. LTE sidelink also offers the potential of out-of-coverage scenarios using connections over the 5.9 GHz band which has been allocated for Intelligent Transport System (ITS) services.

GCF has approved two Work Items Proposals to define conformance testing for Release 14 V2V and V2X. Once activated, a vehicle system supplier will be able to offer the automotive industry certified V2V/X products and systems.

Find out more about GCF

Attend the next

SG or IoT AG meeting

The next GCF Steering Group meeting, SG#73, will be 12-14 December in Guildford, Surrey, UK. The meeting will be hosted by IoTAS, an Observer Member.

A face-to-face meeting of the IoT Agreement Group will be held in Guildford on Monday 11 December.

Non-members wishing to find out more about GCF by attending either meeting should contact the GCF Office. Dial-in access will be available for the IAG meeting for IoT companies that are unable to send a representative.

Global Certification Forum

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