Membership Matters

GCF's membership passsed 300 during December 2016. The following new members have been welcomed to GCF since the last edition of Certification News:

Manufacturers
- Calamp, USA
- MLS Multimedia, Greece
- Nubia Technology, China
- Teltonika, Lithuania
- Tetratab, UK
- Shanghai Tricheer, China

Associate Manufacturers
- CoComm, Spain
- HMD, Finland
- Connected IO, USA

Operators
- DISH Network, USA
- Emirates Telecommunications Company (Etisalat), UAE
- Siesta Shyam Teleservices (MTS India), India

Observers
- Hydsoft, China
- Marquis Tech, India
- Micropross, France
- Radisys, USA

As of 31 December 2016, GCF membership stood at 303 companies:

Operators	128
Manufacturers	76
Associate Manufacturers	21
Observers	77
Client Vendors	1

For more information on GCF membership, download our brochure at bit.ly/GCF_brochure0217

Test once, use anywhere

New Board Directors and Agreement Group chairs elected for 2017-18

The 2016 Annual General Meeting of GCF was co-located with SG#69 in Dubai in December.

Stoyan Baev of Samsung and Filip Kruzel of Sony Mobile Communications were elected to the GCF Board as Manufacturer Directors. Sandro Spanghero of Telit was elected to replace Felix Marchal who has stepped down.

Nick Baustert of Sprint and Mariano Martinez Lopez of Telefonica were elected as Operator Directors while Ma Shuai of China Mobile was elected to take the place of Xiao Shanpeng who also stood down at the end of the end of 2016.

New SG and Agreement Group Chairs

At the December Steering Group meeting in Dubai, Roy Church of Samsung was elected as SG Vice Chair for the remainder of 2016 and became SG Chair on 1 January 2017. Tim Evans of NTT DOCOMO was elected in September as SG Vice Chair for 2017 and SG Chair for 2018. The SG Chair and Vice Chair also sit on the GCF Board as Executive Directors.

In their final meetings of 2016, GCF's Agreement Groups held elections for Chair and Vice Chair positions for 2017-18.

Abdul Rasheed Mohammed of Motorola Mobility was elected as CAG Chair and Wolfgang Schubert of Rohde & Schwarz as CAG Vice Chair.

Michael Ciplajevs of 7 Layers was re-elected as FTAG Chair and Martin Sauter of Deutsche Telekom was re-elected as FTAG Vice Chair.

Roy Church of Samsung was re-elected as PAG Chair and Doug Roberts of Orange was re-elected as PAG Vice Chair.

CAG2 and TCAG2, the agreement groups that maintain conformance certification criteria for CDMA2000 and develop CDMA2000 test cases respectively, elected Chris Hiesberger of Sprint and Omkar Dalal of Ericsson for the two-year term which started on 1 January 2017.

GCF adds significant Indian market experience to Board with Non-Executive Director appointment

GCF has also appointed a new non-executive director. Vikram Tiwathia, Deputy Director General of the Cellular Operators Association of India (COAI), officially joined the Board on 1 January 2017.

Vikram has been serving as COAI's Deputy Director General since 2010 and brings deep and wide-ranging experience of the Indian telecommunications sector to GCF. Previously he was Chief of Regulatory Relations for the Tata Teleservices and Chief Information Officer at the Confederation of Indian Industry. During a long and distinguished career in the Indian Army, Vikram rose to the rank of Colonel leading a unit for operations and planning, a role which included responsibility for communications and IT.

COAI's insights into the high-growth Indian market will be enormously valuable in shaping GCF's strategy.

GCF
Global Certification Forum

February 2017

Certification News

Platform Certification launched to simplify and cut cost of certification

GCF has launched a new Platform Certification process that will enable developers and manufacturers to design innovative new wireless products around previously certified mobile communications functionality. The new scheme has been developed to simplify and cut the cost of certifying products designed to connect to mobile networks. By streamlining the testing and certification phase of product development, manufacturers will be able to shorten their time-to-market.

Platform Certification can be used to optimise the communications performance of any type of product incorporating mobile connectivity and will be particularly relevant to new entrants designing products for the "Internet of Things". By reducing barriers to certification, Platform Certification will contribute to raising the performance of all mobile-connected devices, benefiting manufacturers, operators and their end-users.

GCF defines a platform as any hardware or software subsystem that provides defined functionality within the scope of its certification scheme. Platforms could include chipsets, communications modules, protocol stacks or downloadable clients. "White label" devices capable of being customised as operator- or retailer-branded products can also be certified as platforms.

Under the Platform Certification scheme, the platform supplier specifies the functionality it is designed to deliver and certifies that functionality against all applicable GCF Certification Criteria. The supplier also identifies those criteria that will not be impacted by its integration into an end-product. This enables the platform's certification to be referenced and re-used in the certification of the finished product.

The scheme allows for multiple independent platforms to be integrated into a single end-product provided a suitably qualified expert, recognized by GCF, has assessed the integrations to ensure there are no co-existence issues.

The initiative will create new opportunities for technology companies to provide pre-certified functionality to manufacturers of mobile phones or other mobile-connected devices. As the scheme gains momentum, product designers and manufacturers will be able to select from a growing range of pre-certified platforms to deliver the functionality they require. For more information visit bit.ly/GCF_Platform

Coming soon: certification for CAT-M1 & NB-IoT

Machina Research, the specialist M2M and IoT analyst firm, has forecast that Low Power Wide Area connectivity technologies will have 1.4 billion connections by 2022. Recognising the benefits of being able to leverage existing 3GPP-based network assets to offer carrier-grade IoT connectivity in licensed spectrum, Machina expects that the LTE CAT-M1 and NB-IoT LPWA technologies developed by 3GPP will take a significant share of this market.

GCF is very actively supporting the commercialisation of both technologies: field trial testing for both CAT-M1 and NB-IoT was activated at the January meeting of the Field Trial Agreement Group and the Conformance Agreement Group has activated conformance testing for NB-IoT in FDD-LTE Band 8 (900 MHz).

The formal launch of CAT-M1 and NB-IoT will be announced on the GCF website as soon as all the required elements are in place. This is expected to be within the next few months.

EC-GSM-IoT could also brought with GCF Certification if requested by members.

LPWA, UICC-based NFC, MIMO Work Items approved at SG#69

In December 2016, du hosted GCF's first ever Steering Group meeting in the Middle East.

At SG#69, held in Dubai, members approved eight Work Item Proposals. Three of the proposals will extend GCF's efforts to support the successful introduction of new 3GPP Low Power Wide Area technologies for the Internet of Things:

· Conformance testing of USIM/USAT interworking with 3GPP Rel-13 NB-IoT
· Field trials for NB-IoT devices
· Field trials for Rel-13 LTE CAT-M1 devices

UICC-based NFC

A new Work Item for UICC-based Near Field Communication (NFC) Services will enable test cases for existing Certification Criteria to reflect updates to GSMA's TS.27 NFC Test Book V10.0. Compliance with these requirements will enable operators and service providers to leverage a homogeneous and reliable set of features to develop and deploy their own NFC services.

The deployment of more advanced MIMO capabilities is anticipated by a Work Item for the conformance testing of Rel-13 LTE downlink four receiver antenna ports.

Conformance testing of the GSMA IR.51 profile for Multimedia Telephony Services for IMS (MTSI) over WiFi will also be brought into GCF certification. The functionality enables devices to support voice, video and SMS communication over WiFi.

Two Work Items relate to the certification of Wireless Emergency Alerts (WEA) interoperability in CDMA2000 device and the development of required test cases.

The two field trial Work Items were subsequently activated at the Field Trial Agreement Group's meeeting held in Seoul, Korea, in January 2017.

Performance Agreement Group to introduce options for reporting MIMO OTA performance

GCF's Key Performance Metrics programme allows manufacturers to quantify and report, in a harmonised way, on agreed aspects fo the performance of wireless products. The programme, which is maintained by the Performance Agreement Group (PAG), is an optional but valuable complement to GCF Certification.

Meeting via a web conference in January, PAG#25 discussed the introduction of a Performance Item for MIMO OTA. Guest speakers from CTIA's MOSG and 3GPP's RAN4 addressed the group. While there is currently no technical alignment between CTIA and 3GPP, PAG members are considering the introduction of a Performance Item which gives manufacturers the flexibility to select either the CTIA or 3GPP test methods, or run both if required.

The meeting also updated two existing Performance Items relating to antenna performance. The updates reference the latest mandatory CTIA test plan (3.6.x) which includes the use of a Wide Hand Phantom.

Certification of LTE Band 66 and 3DL CA band combinations activated

The Conformance Agreement Group (CAG) has met twice since the last edition of Certification News.

At GCF's first ever meeting in Vietnam, Comprion hosted members in Hanoi in October 2016. The meeting activated 14 conformance Work Items:

Carrier Aggregation continues to be a priority for operator and manufacturer members alike. The ability to certify devices supporting three aggregated downlinks was activated for nine band combinations: 1A-3A-8A; 1A-3A-19A; 1A-3A-20A; 1A-5A-7A; 2A-2A-13A; 3C-7A; 4A-4A-13A; 39A-41C; 39C-41A

The diversity of Work Items illustrates how GCF certification evolves to support the ongoing work within 3GPP to update and enhance the core standards and features supported by different markets. The following Work Items were activated:

Release 12
▪ EPS Enhancements for TDD Bands 38, 39, 40, 41, 42
▪ Service Specific Access Control in connected mode which enhances the ability of operators to manage traffic demand at times of emergency

Release 11
▪ EPS Enhancements for TDD-LTE Bands 38, 39, 40, 41, 42
▪ Further enhanced Inter-cell interference co-ordination (feICIC) in FDD-LTE Bands 11, 13, 18, 19, 21, 28 – offering improved interference handling in LTE devices
▪ Interference Rejection Band elements of Improved Minimum Performance Requirements in TDD-LTE Bands 38, 40, 41
▪ Further Enhancements to UTRA CELL_FACH – improving to 3G-LTE interoperation

Release 10
▪ EPS Enhancements for FDD Band 18
▪ Protocol conformance testing of EPS Enhancements for FDD-LTE-CDMA2000 Inter-RAT operation
▪ Conformance testing of EPS Enhancements for FDD - UTRAN (3G) Inter-RAT operation
▪ Conformance testing of Enhanced Downlink Multiple Antenna Transmission for FDD bands 2, 4, 5 and 13

Release 7
▪ E-DCH (Enhanced Dedicated Channel) type 1 enhanced receiver – an update to HSUPA functionality specified in Release 7) type 1 enhanced receiver has been added to certification

GSMA TS.26/27 Version 8
▪ Additional GSMA Android Test cases for UICC-based NFC services.

Certification of LTE Positioning based on Assisted Global Navigation Satellites Systems (A-GNSS) only was also activated. The tests will demonstrate compliance of LTE Positioning in conjunction with the GPS and GLONASS satellite constellations.

CAG#49 took place in Seoul, South Korea, in January 2017 hosted by Bureau Veritas. Eight Work Items were activated, seven of which related to LTE. The eighth was GCF's first activated Work Item for NB-IoT

Two of the LTE Work Items activated the certification of devices which operate in FDD Band 66, in North America's "Extended AWS" spectrum.

Improved Minimum Performance Requirements for Interference Rejection was also activated for devices operating in FDD Band 66 as well as TDD Band 42.

Conformance testing of Inter-Cell Interference Co-ordination was activated for TDD-LTE bands 38, 39, 40 and 41.

Uplink 64QAM is a new modulation scheme designed to boost uplink data rates by 50 per cent compared with the existing 16QAM scheme. Introduced in 3GPP Release 13, Uplink 64QAM can now be certified in FDD Band 13, TDD Band 41 and two Carrier Aggregation Bands: 39A-41A and 39C.

Certification of Release 12 Small Cell Enhancements, developed to enhance device performance when used in small cell environments, was extended to 24 Carrier Aggregation Band combinations.

Preparations to support the roll-out of 3GPP LPWA technologies continued with the activation of conformance testing for NB-IoT devices in FDD Band 8 (900 MHz).

Release 9 LTE FDD-TDD dual-mode operation can now be certified for three band combinations:
▪ FDD Band 05-TDD Band 41
▪ FDD Band 08-TDD-Band 40
▪ FDD Band 08-TDD Band 41.

New Test Platforms validated at CAG#48 and CAG#49

▪ TP160: Anritsu ME7800 RF/RRM/PROTOCOL Conformance Test Platform
▪ TP154: Micropross NFC Forum Analog Conformance Test Tool
▪ TP155: Micropross NFC Forum Digital Conformance Test Tool
▪ TP199: Starpoint SP8315 Wireless Test Set for NB-IoT protocol/RF/RRM conformance test and eMTC protocol/RF/RRM conformance test
▪ TP200: Starpoint SP8630 Integration Test System for NB-IoT protocol/RF/RRM and conformance test and eMTC protocol/RF/RRM conformance test

Meet us at Mobile World Congress

With the global industry gathered together in one place, the Mobile World Congress (Barcelona, 27 February-2 March) is a great opportunity for GCF to connect with industry partners, organisations, existing and prospective members.

If you are attending Mobile World Congress, we would love to meet with you during your visit to Barcelona. Let us have your feedback on initiatives such as Platform Certification, CAT-1M and NB-IoT certification and tell us about your future needs in the area of device testing and certification.

GCF has an Executive Meeting Room (C18EMR) in Zone C above Hall 2.

The entrance to Zone C is from the Upper Walkway. (From the Hall 2 exhibition floor, take the escalator next to Saudi Telecom Company (STC) stand: Zone C is on the opposite side of the Upper Walkway at the top of the escalator.)

We are looking forward to see you in Barcelona!

Record number of manufacturers certify devices in 2016

A record 58 manufacturers certified a total of 471 devices in 2016. The annual review of Mobile Device Trends, based on an analysis of last year's GCF device certifications, highlighted the importance of multi-mode devices: 89 per cent of all certified devices incorporated more than one bearer technology while 64 per cent of devices incorporated three or more.

Half of all certified devices were smartphones. A comparison of respected third-party market data with the GCF database of certified devices suggests that 60 per cent of the smartphones sold in Q3 2016 were from GCF members.

Wireless modules were the second largest category accounting for 17 per cent of certifications whilst IoT / M2M devices accounted for around a tenth of certifications.

2016 GCF-Certified devices by type
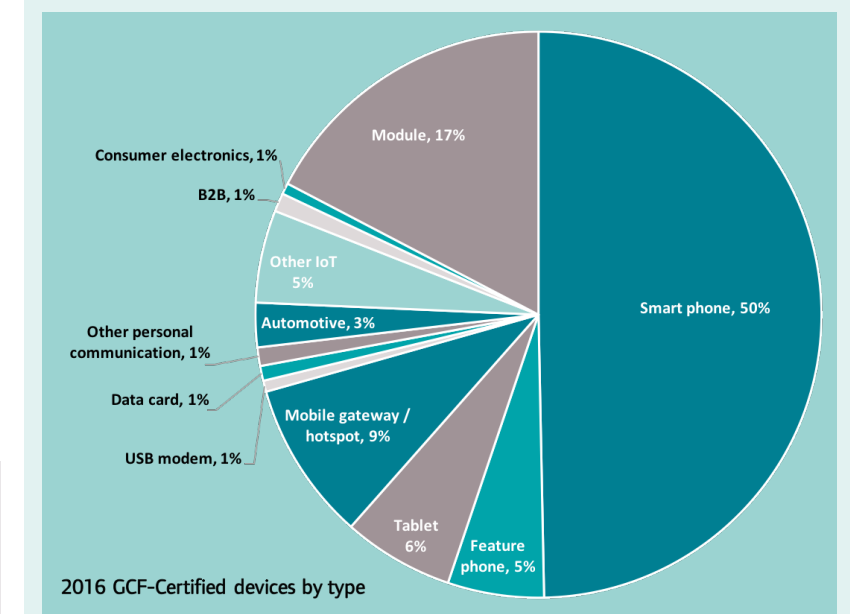
The proportion of GCF-certified devices incorporating LTE grew to 76 per cent, up seven percentage points from corresponding figure for 2015. VoLTE support was certified in 23 per cent of LTE devices.

Downloaded the 2016 Device Analysis at bit.ly/GCF_DeviceAnalysis_2016