STRATEGIC BUSINESS PLAN (SBP)

IEC/TC OR SC:	SECRETARIAT:	DATE:
107	**United Kingdom**	**2017-07**

Please ensure this form is annexed to the Report to the Standardization Management Board if it has been prepared during a meeting, or sent to the Central Office promptly after its contents have been agreed by the committee.

A. STATE TITLE AND SCOPE OF TC

Process management for avionics

To develop process management standards for electronics used in Avionics systems and equipment for commercial, civil and defence aerospace applications.

Title and scope unchanged.

B. MANAGEMENT STRUCTURE OF THE TC

The TC has no Sub-committees. It is managed by a Chairman and a Secretary. An Assistant-Secretary helps the Secretary, regarding the management of documents (schedule, templates, forms, ...).

The IEC provides a Technical Officer.

The TC has now 5 working groups (WG) and 1 maintenance team (MT).

C. BUSINESS ENVIRONMENT

The aerospace industry is increasingly dependent on 'off the shelf' electronic components, equipment, and systems designed and manufactured mainly for other industries, over which the aerospace industry has less control. TC 107 must develop standard processes to use and manage these components, equipment, and systems in aerospace applications, possibly in liaison with other industrial sectors also concerned.

The standards enable the Avionics Industries to comply with regulatory requirements for example:

- The Civil Avionics Industry FAR regulation 21 for 'Approval of Materials, Parts, Processes and Appliances' Subpart K, in particular section 303 paragraph (4); or
- The EASA Certification Memorandum, which is a document for information purposes only and must not be misconstrued as formally adopted acceptable means of compliance (AMC) or guidance material, for "Development Assurance of Airborne Electronic Hardware" (section related to COTS components).
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They can also be used for conformity assessment (for example IEC TS 62239-1 is the reference for "IECQ ECMP scheme").

D. MARKET DEMAND

Air framers, Original Equipment Manufacturers (OEM), equipment suppliers and their subcontractors are the main customers.

- Aerospace customers, regulatory agencies, and defence agencies demand assurance that avionics products will operate reliably during their required life. The market requires that the effects of component obsolescence and counterfeit and recycled components are minimized.
- Advanced submicron electronics and now deep submicron electronics (lithography size lower than 100 nm) can lead to new failure mechanisms and degradation modes affecting potentially reliability and wear out of electronic components. They can suffer data corruption or malfunction even at sea level due to the effects of secondary atmospheric radiation neutrons produced in the interaction between the Atmosphere and Cosmic Rays that originate beyond Earth. At the cruising altitude of modern airliners the flux of secondary atmospheric radiation neutrons is about 300 times that which it is at sea level. The market demands that avionics electronics must be able to meet its application requirements at these altitudes. Also, semi-conductor wear-out effects require management to ensure long term reliability of Avionics products.

E. TRENDS IN TECHNOLOGY AND IN THE MARKET

High-volume applications dominate the electronics industry such as computers and telecommunication products. There is relentless pressure to reduce component cost, improve their performance and increase their physical integration. This results in products that change rapidly and cause obsolescence and potential reliability and wear-out problems. The aerospace industry must respond to these trends while meeting its own cost, reliability, and performance requirements. Work is continuing meeting the impact of legislation on lead-free electronics and counterfeited prevention.

Regarding the market, the aeronautical industry faces an increasing upwards trend regarding two items: obsolescence and counterfeiting.

The obsolescence management of components for the Avionics product life time of 40 years has to be managed in conjunction with sourcing components from the mass markets which are essentially pushed forwards by the automotive and telecom industries, which have much shorter availability lifetimes in the marketplace.

Counterfeiting prevention in a developing worldwide electronic component market is essential for avionics applications, with regards to reliability and safety requirements.

F. SYSTEMS APPROACH ASPECTS (REFERENCE - AC/33/2013)

TC107 needs relationships to other committees, in order to share common problems and to avoid developing duplicate documents created by other committees.

Component committees (TC107 role of customer)	IEC TC 47	Semiconductor devices
	IEC TC 91	Electronics assembly technology
	IEC TC111	Environmental standardization for electrical and electronic products and systems
	SAE	Counterfeit Electronics Parts committee
	STACK International	Microcircuits and passive specifications
	IEC TC 56	Dependability
System committees (TC107 role of supplier)	ISO TC 20	Aircraft and space vehicles
	ISO TC 20/SC1	Aerospace electrical requirements
	SAE	Committees to be agreed upon.
	IPC	Lead-free management
	IECQ	International Electrotechnical Commission Quality Assessment System for Electronic Components

G. CONFORMITY ASSESSMENT

Some TC 107 publications may be used for conformity assessment aspects. IEC/TS 62239-1 is the base for the IECQ ECMP Scheme.

H. 3-5 YEAR PROJECTED STRATEGIC OBJECTIVES, ACTIONS, TARGET DATES

STRATEGIC OBJECTIVES 3-5 YEARS	ACTIONS TO SUPPORT THE STRATEGIC OBJECTIVES	TARGET DATE(S) TO COMPLETE THE ACTIONS
Maintaining and updating existing documents as necessary.	Review by WGs and MT	cf. PoW
Developing documents regarding lead-free in avionics (TS).	Market survey	cf. PoW
Developing documents regarding atmospheric radiation problematic.	Market survey	cf. PoW
Developing a document dealing with COTS assemblies for avionics.	Market survey	cf. PoW

Developing a document dealing with semiconductors life time.	Market survey		cf. PoW	
Developing a document dealing with the long-term storage of assembled boards.	Market survey		cf. PoW	
Developing a document dealing with the PCB assembly rules.	Market survey	cf. PoW	Market survey	cf. PoW