



IEC/TC OR SC: TC38	SECRETARIAT: Italy	DATE: 2017-02-24
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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**IEC TC38 – Instrument Transformers**

Scope: Standardisation in the field of AC and/or DC current and/or voltage instrument transformers, including their subparts like (but not limited to) sensing devices, signal treatment, data conversion and analog or digital interfacing.

This scope has been updated during the Madrid meeting in 2009, in order to cover all the emerging technologies. This has led to a tighter coordination with TC13, TC57, TC85 and TC95 as these new technologies open new scenarios for equipment with integrated functions crossing the traditional TC boundaries of responsibility.

B. MANAGEMENT STRUCTURE OF THE TC

The current management structure of TC38 is the following:

Chairman: Mr. Pascal Tantin (FR)

Secretary: Mr. Filippo Frugoni (IT)

CAG: was established in 2009, is composed by the officers and the WG/MT/PT/AHG Leaders

WG37: Leader: Pascal Tantin

This WG covers all projects related to new technology Instrument Transformers and is divided into different Project Teams:

PT61869-6, -7, -8 Leader: Pascal Tantin

PT61869-9, -13 Leader: Veselin Skendzic

PT61869-10, -11, -12 Leader: Joachim Schmid

PT61869-14, -15 Leader: Pierre-André Monfils

MT39: Revision of IEC clause 321. Leader: Olga Petrova

WG45: Standard Mathematical Models for Instrument Transformers. Leader: Ruthard Minkner

WG46: Current and Voltage sensors or detectors to be used for fault passage indication purposes. Leader: Alberto Cerretti

WG47: Evolution of Instrument Transformer requirements for the modern market. Leader: Paolo Mazza

MT48: Revision of IEC 61869-1: Instrument Transformers – General Requirements. Leader: Pierre-André Monfils

WG49: Instrument Transformers for low voltage applications. Leader: Benoit Leprettre

JWG52: Safety of Instrument Transformers for low voltage applications (with TC66). Leader: Benoit Leprettre

C. BUSINESS ENVIRONMENT

Instrument transformers are essential items in the operation, monitoring and protection of generating plants, transmission and distribution systems. Instrument Transformers, which are covered by International Standards issued by TC38, are widely used at all voltage levels, ranging from low voltage up to EHV substations.

The importance of the standards produced by TC 38 is due to the fact that control, protection and measuring systems are supplied through instrument transformers.

D. MARKET DEMAND

Market

The main market and application of TC 38 standards is in the system integration of instrument transformers, circuit breakers, metering and protection relays. These are used by manufacturers and users in conjunction with other standards from other IEC Technical Committees.

IEC standards for Instrument Transformers are widely used throughout the world. There is only one important country where different standards are used - the U.S.A. and countries directly influenced by the U.S.A., where IEEE standards are applied. Harmonization with the US standards is therefore aimed.

Users of TC 38 standards

TC 38 standards are used by utilities and contractors for the specification of new installations (e.g. substations and power plants) as well as renewal or overhaul of old plant and equipment. Manufacturers of Instrument Transformers also use TC 38 standards. The specifications and performances of various kinds of relays, meters and controls are also based on TC 38 standards.

Participation in TC 38 work

In developing the wide range of standards; TC38 relies mainly on its working groups. Main participants in the working group activities are members coming from manufacturers of Instrument Transformers and, to a lesser degree, from utility companies. Larger representation of manufacturers of relays and meters would be desirable.

E. TRENDS IN TECHNOLOGY AND IN THE MARKET

Trends in technology

After decades of supporting manufacture and use of inductive instrument transformers and capacitive voltage transformers, TC 38 now has to consider new technologies, electronic and optical systems which are under development.

As with the development of Capacitive Voltage Transformers (CVTs), the introduction of new products in the market place results in larger number of manufacturers with less expensive products. Now the market is facing a similar situation with the new technologies like electronic transformers, low-power instrument transformers and digital communication.

The advent of new manufacturers and new products is welcomed by the deregulated market because of the associated cost reduction.

This creates a need for clear standardization to avoid loss of quality of service and incompatibility between equipments from different manufacturers.

The application of recently developed horizontal Standards is also needed, such as EMC Standards and Safety Standards.

Market trends

We believe that the introduction of new technology Instrument Transformers (e.g. Low Power Instrument Transformers in Medium Voltage and Electronic Instrument transformers with digital interface in the Very High Voltage field, AC and/or DC) will be fostered by the introduction of Digital Substation Systems and by the wider use of IEC 61850.

This will cause a possible change in the competition among manufacturers due to the possible introduction of new players due to the new technology. This may affect also average price levels. One important tendency in the Very High Voltage networks is the introduction of DC High Voltage lines. For this reason TC38 after Prague meeting in 2011 has started a Project Team with the scope to issue product standards for DC Instrument Transformers within IEC 61869 series. Additionally; during the past few years TC38 recorded an increasing interest in the application of low power instrument transformers to be used with power meters in the low voltage range. This application is generally associated with a special attention to cost reduction.

Ecological environment

Ecological issues are not generally a major concern, since the lifetime of equipment is very long and, in addition, all the materials used are recyclable or environmentally friendly.

However, some problems would be faced concerning: Disposal of oil, SF6 and other organic materials and the Risk of explosion when fire occurs inside the instrument transformers.

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

Component Committees (IEC TC38 as a customer)	IEC TC10	Fluids for electrotechnical applications
	IEC TC15	Solid electrical insulating materials
	IEC TC33	Power capacitors and their applications
	IEC TC36	Insulators
Other system Committees (IEC TC38 as a supplier)	IEC TC13	Electrical energy measurement, tariff and load control
	IEC SC17C	High Voltage Switchgear and controlgear assemblies
	IEC TC57	Power systems management and associated information exchange
	IEC TC85	Measuring equipment for electrical and electromagnetic quantities
	IEC TC95	Measuring relays and protection equipment
Other committees	IEC TC115	High Voltage Direct Current (HVDC) transmission for DC voltages above 100 kV
	IEC TC28	Insulation coordination
	IEC TC66	Safety of measuring, control and laboratory equipment
	IEC TC109	Insulation coordination for low voltage equipments
	IEC TC112	Evaluation and qualification of electrical insulating materials and systems

The following liaisons are active:

- IEC TC1 (Ms. Olga Petrova – RU)
- IEC TC10 (Mr. Flavio Mauri – IT)
- IEC TC13 (Mr. Pascal Tantin – FR)
- IEC SC17/C (Mr. Ivano Gentilini - IT)
- IEC TC33 (Mr. Joachim Schmid – CH)
- IEC TC36 (P.A. Monfils - BE)
- IEC TC57 (Mr. Roman Graf- CH)
- IEC SC77/A (Mr. Paolo Mazza – IT)
- IEC TC85 (Mr. Benoit Leprettre – FR)
- IEC TC95 (Mr. Volker Leitloff – FR)

- IEC TC115 (Mr. Pierre-André Monfils – BE)
- BIPM (Mr. Paolo Mazza – IT)
- CIGRE/ SC A3 (Mr. Farnoosh Rahmatian – CA)
- CIGRE/ SC B5 (Mr. Volker Leitloff – FR)
- OIML/TC 5 (Mr. Paolo Mazza – IT)
- IEEE- Instrumentation and Measurement Society (IMS) -TC39: Measurements in Power Systems (Mr. Lorenzo Peretto – IT)
- IEC TC28, being established (P.A. Monfils - BE)

G. CONFORMITY ASSESSMENT

Standards issued by TC38 are currently included in the IECEE conformity assessment system

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
Complete migration from the IEC 60044-X to the IEC 61869-XX. This will be not only an editorial process, but also a technical update.	All necessary PWIs and PTs have been established. The progress of works is serialized according to the available resources	Publication dates: 61869-7: 2019 61869-8: 2019 61869-10: 2018 61869-11: 2018 61869-12: 2019 61869-13: 2018
Development of standards for DC Instrument Transformers.	The relevant projects are already started	61869-14: 2018 61869-15: 2018
Development of Standards for Fault Detectors in cooperation with IEC TC95 and TC57	2 publications are missing to complete the series.	NP : 2017 IS: 2020
Development of Standard Mathematical models for Instrument Transformers	PWI has been started	NP:2017 IS:2020
Issue a standard dedicated to instrument transformers for low voltage applications	NP has been launched	CD:2017 IS:2019
Complete the TC38 Standards coverage of all emerging technologies	Issue the relevant PWI	
To cover safety aspects of Instrument Transformers	NP for low voltage has been issued. For HV a PWI has been approved	
To cover the issue of the uncertainty in the measurement of errors	New WG will be launched in 2017	PWI: 2017