

Characterization of AC and DC MV Instruments transformers in extended frequency range up to 150 kHz

WP 3. Infrastructure for current generation and traceable measurement chain

Participants:



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June 2023

The project 22NRM06 ADMIT has received funding from the European Partnership on Metrology, co-financed by the European Union's Horizon Europe Research and Innovation Programme and from by the Participating States

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Task 3.1: AC and DC current generation systems

To develop generation systems for power frequency 2 kA (DC and 50/60 Hz) + 150 kHz – parallel conductors.

Task 3.2: Current reference measurement systems

Reference measurement system to employ in the accuracy evaluation of AC and DC Current Transformers in the frequency range between 9 kHz and 150 kHz:
0,01% for fundamental component and 1% for $f = 9 - 150$ kHz (transient and stationary regimes).

Task 3.3: Industry oriented CT test procedures

To develop an industry-oriented CT test procedure, that is a procedure allowing industry laboratories to evaluate the accuracy of Current Transformers through the execution of simplified tests

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	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
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Task 3.1: AC and DC current generation systems

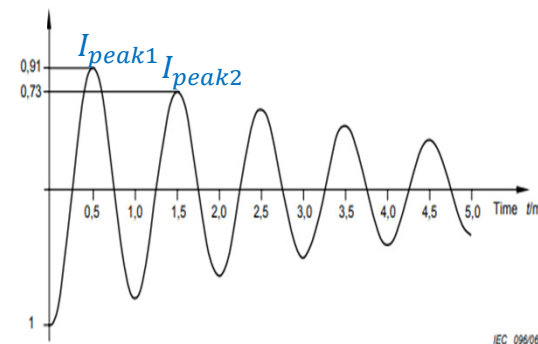
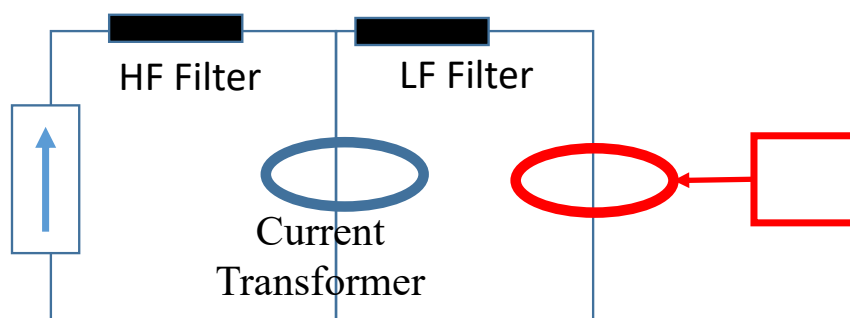
A3.1.1. Literature review.

A3.1.2. Identify suitable AC & DC current generation solutions.

A3.1.3. Stationary current generator. AC/DC + 9 – 150 kHz superimposed disturbances.

A3.1.4. Transient current generator. AC/DC + 9 – 150 kHz superimposed transient disturbances.

A3.1.5. & A3.1.6. Good practice guide for current generation of power frequency quantity, up to 2 kA for DC or AC, with superimposed frequency components up to 150 kHz.



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Task 3.2: Current reference measurement systems

A3.2.1. Literature review.

A3.2.2. Choose a current reference sensor. DC – 150 kHz

A3.2.3. Characterization of the reference current sensor.

A3.2.4. Upgrade of the reference comparators.

A3.2.5. Traceability of the current measurement system. Target uncertainties: 0.01% / 0.1 crad fund. component & 1% / 2 crad harmonics.

A3.2.6. Submission of a joint paper.

A3.2.7. & A3.2.8 Validation report on the traceability of current reference measuring systems, up to 2 kA for AC or DC, with superimposed frequency components up to 150 kHz.

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Task 3.3: Industry oriented current transformers test procedure

A3.3.1. Test of commercial current transformers.

A3.3.2. Analysis of the experimental results.

A3.3.3. Industry oriented test procedure.

A3.3.4. Validate the test procedure & compare it with the reference method.

A3.3.5. Submission of a joint paper.



