IEC STANDARDS , DEVELOPED AND OTHER COUNTRIES

Author: Sergio Feitoza Costa **** Cognitor – Consultancy, R&D and Training
Site http://www.cognitor.com.br/en_home.htm Email: sergiofeitoza@cognitor.com.br

Most of the developed countries have a permanent and active actuation in the IEC working groups (WGs). Their geographic location permit to go at low cost to the WG meetings. For experts living in South America, the Mena countries or Asia the geographic distance is a barrier to the participation in the meetings. There are significant expenses with air ticket, hotels and time to go two or three times per year to the WG meetings.

For countries, participating effectively in the preparation of a new IEC publication its implementation as a national standard is almost immediate. Having participated in the preparation, they already know the details and, important, the standard is in a language that most of them they can read easily.

The language in a technical standard is much more relevant than most of the people using English as the language of everyday life assume. Important aspects may be not clear between the commas and double meaning words. For the standard average user, the time necessary to understand correctly the intention of the standards makers, when writing, usually reach some three years. I remember difficulties I had in the past when coordinating IEC WG meetings. Sometimes was difficult to understand some sentences and I needed to ask to the experts, just in front of me, to explain me the correct interpretation.

I am an electrical engineer participating for 3 decades in IEC work. I had the honor to chair the IEC Technical Committee 32 and to convene IEC WGs. I am currently actuating in an IEC WG preparing the future IEC 62271-307 and active member of CIGRÈ WGs in related themes.

The idea of writing this article came, few years ago, when I proposed to the Standardization National Committee (SNC) of my country, the preparation of a new standard on the state of the art theme “simulation of high power laboratory tests and guidelines for this”. Although necessary, there is no IEC standard for this purpose. There are several IEC standards in use for decades that, if were coordinated by guidelines in this new one, , could be very useful for low to high voltage users as explained below.

The proposal was rejected in despite of the rare fact that was formally supported by 25 companies including manufacturers of equipment for substations, testing laboratories, big users and utilities. Therefore, I decided to divulge the idea and the text in Internet, free download and use (Reference [1]). The background is in References [2 and 3]. This text is now one of the references in the recent Brochure CIGRÈ 602 / 2014 in Reference [9]. This brochure is the most complete worldwide document in the theme “internal arc”.

IEC publications are bilingual in English and French. The Russian Committee prepares Russian language editions. There are some publications translated into Spanish. Many of the NSCs geographically far from Europe do not participate directly in the IEC working groups but use IEC standards as basis for their national standards. For countries like Japan with high average level of education and technological status, the distance is not a barrier. They know the importance of being in the meetings. They are however an exception.

The basic activity of the “far” NSCs is translating the IEC standards from English to the language of their country. They usually start to do it two years after the publication of the original IEC standard. It takes two to three years to do the translation and to approve it as a “National Standard. Therefore, 4 or 5 years after the “new” national standard is finally available. At this moment, a new revision of the IEC is already under publication making that translation old in the origin. If we sum the efforts in the World countries, the order of magnitude of the money spent in these translations arrive to hundreds of million Euros per year.

This is the "technical knowledge gap" mentioned in the title. IEC as a reliable worldwide opinion leader can give to the World a good example helping to reduce it through actions like:

- Providing the main IEC original standards published in languages as Portuguese, Chinese and some others, independent of the action of NSCs. Most of the buyers of standards in these countries will prefer to buy directly from IEC them to buy a translation of a previous version. If you ask about this to such NSCs they will tell that everything is going well and no changes are needed. They resist stopping with this erroneous strategy.

- Creating a mechanism to enable ideas from individuals, related to proposals for IEC standards, to arrive to IEC without needing to pass through the NSCs.

- The creation of an IEC working group to develop the standard "Guidelines for the use of simulations and calculations used in IEC standards". The base text in Ref. [1] can also orientate about the use of excellent but little known useful IEC documents like IEC/TR 60943, IEC/TR 60890, IEC 61117, IEC 60865 [References 4 to 8].

At this point, the readers are possibly asking, "Who will finance these actions and activities?" . In the past, governments were very near to technical standardization activities because had a proper view of their strategic importance. When the infrastructure activities went through privatization, all over the World, governments moved away from the technical standards scenario. I witnessed this happening in my country and I am convinced that was a big mistake. It is time to take a step behind and try to involve governments again in the financing of "technical standardization activities which can reduce technological and social gaps between countries". Governments spend billions of Euros to reduce the consequences, and not the causes, of violence, corruption and extremism. The source of money is here!

References:

[1] Proposal to IEC about the use of simulations in technical standards:" GUIDELINES FOR THE USE OF SIMULATIONS & CALCULATIONS USED IN IEC STANDARDS"
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[2] A "GUIDE" FOR THE USE OF CALCULATIONS AND SIMULATION OF LABORATORY TESTS FOR INCREASING THE COMPETITIVENESS OF THE ELECTRIC INDUSTRY
http://www.cognitor.com.br/Article_Competitivity_Eng_04102011.pdf

[3] Report 071/2014: VALIDATION of the simulation of High Power Tests (temperature rise, short time and crest current tests – electro dynamical forces / stresses and overpressures from internal arc)
http://www.cognitor.com.br/TR_071_ENG_ValidationSwitchgear.pdf

[4] IEC/TR 60943: Guidance concerning the permissible temperature rise for parts of electrical equipment,
[5] IEC/TR 60890: A Method of Temperature-rise Verification of LV Switchgear&Controlgear Assemblies by calculation.
[6] IEC 61117: Method for assessing the short-circuit withstand strength of partially type-tested assemblies (PTTA)
[7] IEC 60865-1: Short-circuit currents – calculation of effects – Part 1: Definitions and calculation
[8] IEC 60865-2: Short-circuit currents – calculation of effects – Part 2: Examples of calculation

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CIGRE WG A3.24 - Brochure 602 / 2014: "Tools for the simulation of the effects of the internal arc in T & D switchgear"

COGNITOR – Consultancy, R&D & Training
Phone: 55-21-2465 3689 or 55- 21 -33934600 or 55-21-9 8887 4600
E-mail: sergiofeitoza@cognitor.com.br Site http://www.cognitor.com.br/en_home.htm Skype sergiofeitoza1