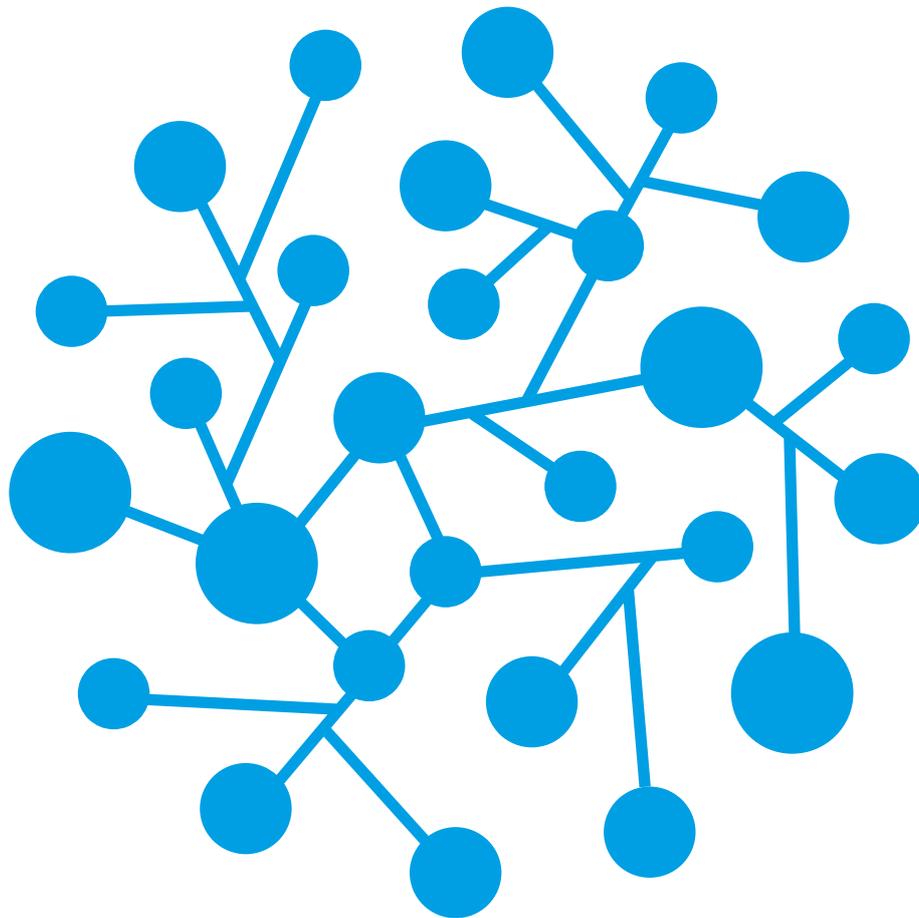Shaping the Future of Standardization

The Frankfurt Agenda

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The 80th IEC General Meeting 2016 in the German city of Frankfurt focused strongly on the digitalization of our mo-dern world. The digital revolution will have a decisive influence on the future development and use of standards. With this firmly in view, the Reinvention Laboratory present-ed and discussed a wide range of ideas, concepts, strategies and visions from the world of standardization. The most im-portant thoughts, conclusions and positions resulting from the Reinvention Laboratory and the many discussions that took place within the scope of the 80th IEC General Meeting have been summarized on the following pages. Featuring the title **Frankfurt Agenda**, we will provide these to the IEC as a contribution to help form the future of standardization.

1. Expansion of our Organizational Structure

The IEC should create open platforms for networking of interest groups and manage the collaboration with other SDOs and consortia in order to play a leading role in the standardization of future cross-domain topics.

Driven by the means of digitalization our world is getting more and more networked and connected. This leads to a further convergence of technologies across many different domains and application areas. Technologies which were traditionally not in the scope of our industries are becoming increasingly important for our stakeholders. This means also that we have to work more cross domain and more cross sectoral with our standardization activities. We have to cooperate with new groups of stakeholders with whom we have never worked together before. The IEC is currently well recognized as an international standardization platform that includes nearly all stakeholders. However, for many of the internet technologies we expect in the future, we have to face the fact that standardization activities in these areas are very often done within industry fora and consortia.

To remain the home of our industry this means we also need to find ways to reflect the needs of our stakeholder in these organizations.

Furthermore a lot of IEC/TCs are still taking a product-oriented approach. The focus of manufacturers, both now and in the future, is on systems rather than products and they need a coherent standardization portfolio. Different platforms will inevitably lead to a fragmentation of standards/specifications and a lack of ability to manage the complexity created by systems.

To meet the demands of the market, product-oriented IEC silos must be broken down and efforts made to involve all IEC experts in new structures that support a system approach.

At its General Meeting in Frankfurt, the IEC was therefore encouraged to become the focal point for a **cross-sector moderation platform, bringing together all its internal and external experts with professionals from fora, consortia and research institutes and to manage standardization activities for our stakeholders also outside the organization limits of the IEC in SDOs, fora and consortia.**

It is obvious that time to market is one key demand from industry and supporting standards must therefore be made available at a very early stage. For this purpose the IEC needs to be aware of new technology trends and must ensure it has an adequate technology radar.

2. Evolution of our Tools and Processes

The IEC, as the home of industry, should provide future-oriented digital standardization processes and tools.

As we heard on several occasions during the 80th IEC General Meeting, standardization has to become faster, and even has to happen in real-time. "A digital year is just 100 days", was one of the quotes addressing this fact. And standardization has to be the driver for innovation and not the follower.

As product cycles accelerate, standardization has to become faster. Given that the evolution in products is an ongoing process, standardization has to evolve to include real-time processes as well. Standardization has therefore to be changed from a variety of separate processes to **one continuous process.**

For this purpose the IEC should provide open platforms for the prompt elaboration of digital products such as standards, minutes or agendas. All existing tools and procedures of the IEC should be challenged and the IEC should introduce:

• new **tools for online collaboration,** and
• new communication formats like **social media.**

Time to market standards that really meet customers' expectations can only be achieved if the normative requirements are already tested during the elaboration processes of the individual standards.

The IEC should therefore work closely together with **external test platforms** (in test centers) in parallel to the elaboration of standards as efficient and reliable feedback loops.

3. Innovation of our Portfolio

The IEC should develop itself and the whole community to become the leading provider of digital standards and services.

We need strategies for transforming standards into digital standards and services. Today, we still write standards in the same way that we did in the year 1906. The only changes have been that paper has been replaced with word processing and PDFs, and typewriters have been superseded by laptops. At the same time, we can observe in our daily lives, both in private and professional environments, how traditional working methods can be replaced with new, disruptive business models from one day to the next. The success of new business models is mainly based on the following two core characteristics:

• a consistent digital transformation, which in part enables fully new approaches, and
• the consistent development of digital services from the perspective of the customer.

The alignment with customer needs is made clear by a simple requirement of standardization, which was addressed at the Reinvention Laboratory during the IEC General Meeting 2016 in Frankfurt: "I want to download a standard". The goal is therefore to make standard content directly applicable – e.g. in engineering tools or testbeds.

The IEC must focus on customer needs during the development of the standards. In this context, the IEC must develop efficient and timely digital products and services with a high practical value that are easier for our standard users to locate, read and apply.

For this purpose the IEC needs to develop ways to create **database-oriented standards** and **code-based standards**. In addition the IEC needs to include open-source and open-community approaches in order to provide not only human-readable standards but also fast-to-use standards in the form of reference software or formally-described and machine-readable standards.

4. Development of our new Business Models

The IEC should closely collaborate with its national committees to jointly develop new business models for the profitable marketing of digital standards and services.

Different standard users place different demands on standards. Flexible and modular standard content can be provided digitally in various standard products according to the current needs of the customer. Numerous examples like machine-readable standards, requirements engineering, services like reference software for immediate testing during engineering (similar to the open source approach) or guidance through the world of standards were presented at the Reinvention Laboratory.

These sample ideas may also be referred to as "standards as a service", based on "software as a service", and provide insight into the future development of our products and services, which in turn require new business models – just as we are currently experiencing in many cases of digital transformation.

The IEC should therefore **develop new, profitable business models together with its national committees** in order to continue the further development of standardization and finance the consensus-based creation of standards.
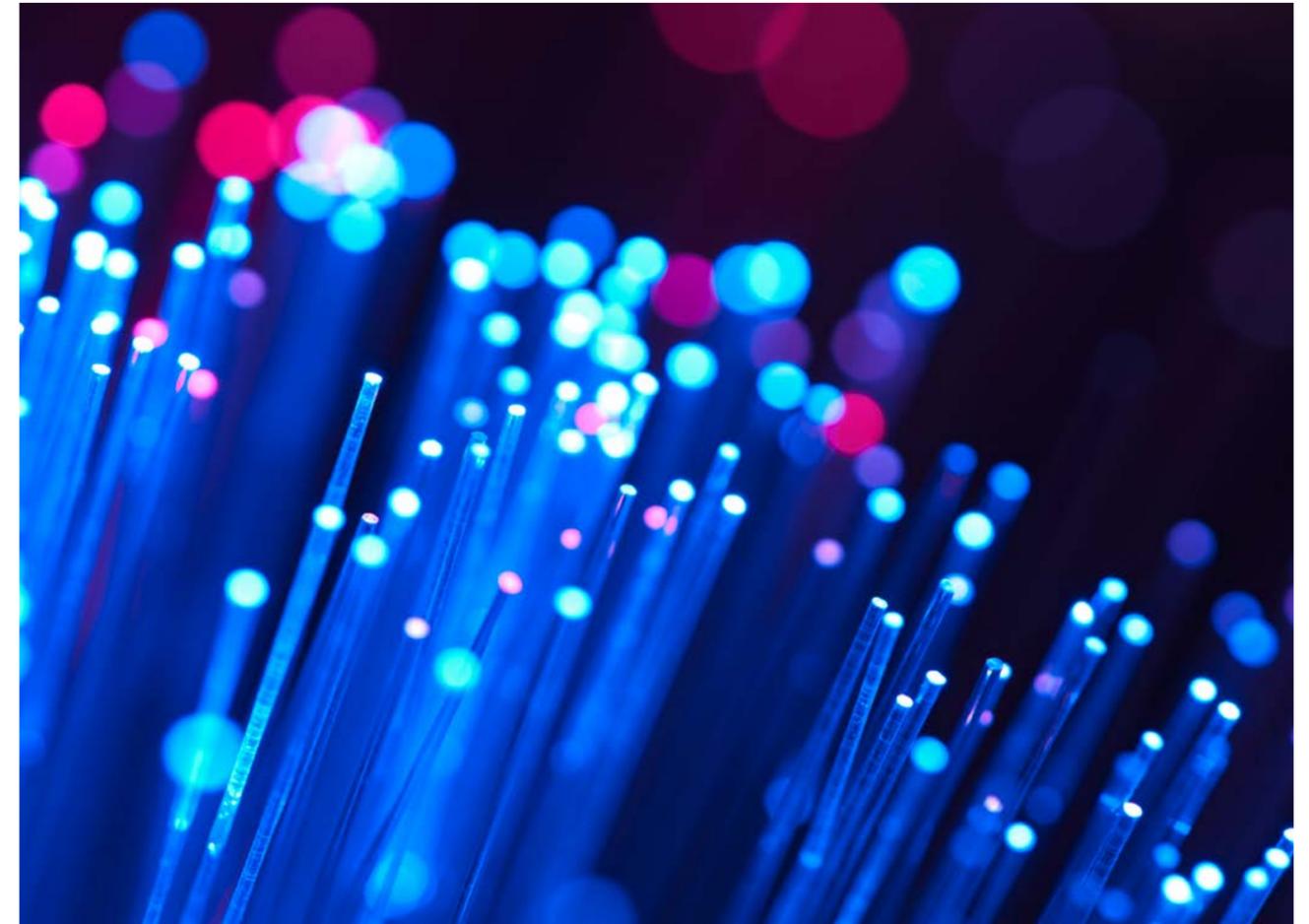
5. Strengthening of our Conformity-Assessment Services

The IEC should expand its platform for globally acknowledged conformity assessment systems in close cooperation with international and regional regulators such as WTO, UNECE, the EU Commission and others.

The IEC is the home of both electrotechnical standardization and conformity assessment. These are two interlinked pillars for serving the demands of industry. The IEC already operates four recognized Conformity Assessment Systems offering internationally recognized certification for products, personnel and services, based on international standards (mainly on IEC standards).

At the IEC General Meeting in Frankfurt it was generally understood that the **IEC will expand its platform for globally acknowledged conformity assessment systems.**

To reach this goal the IEC community should undertake the following actions:

1) Cooperation with regulators

The most efficient way for manufacturers to demonstrate compliance with laws/regulations is the use of conformity assessment processes based on international standards, which are recognized by the national regulators and authorities. The objective is: "One standard, one test, accepted everywhere". To reach this goal,

regulators should be encouraged to base their national laws/regulations as far as possible on both IEC standards and IEC conformity assessment systems. Therefore, the IEC itself should **deepen its cooperation with international and regional regulators** such as WTO, UNECE and the EU Commission. In addition **NCs should contact their national regulators** to facilitate the dialogue.
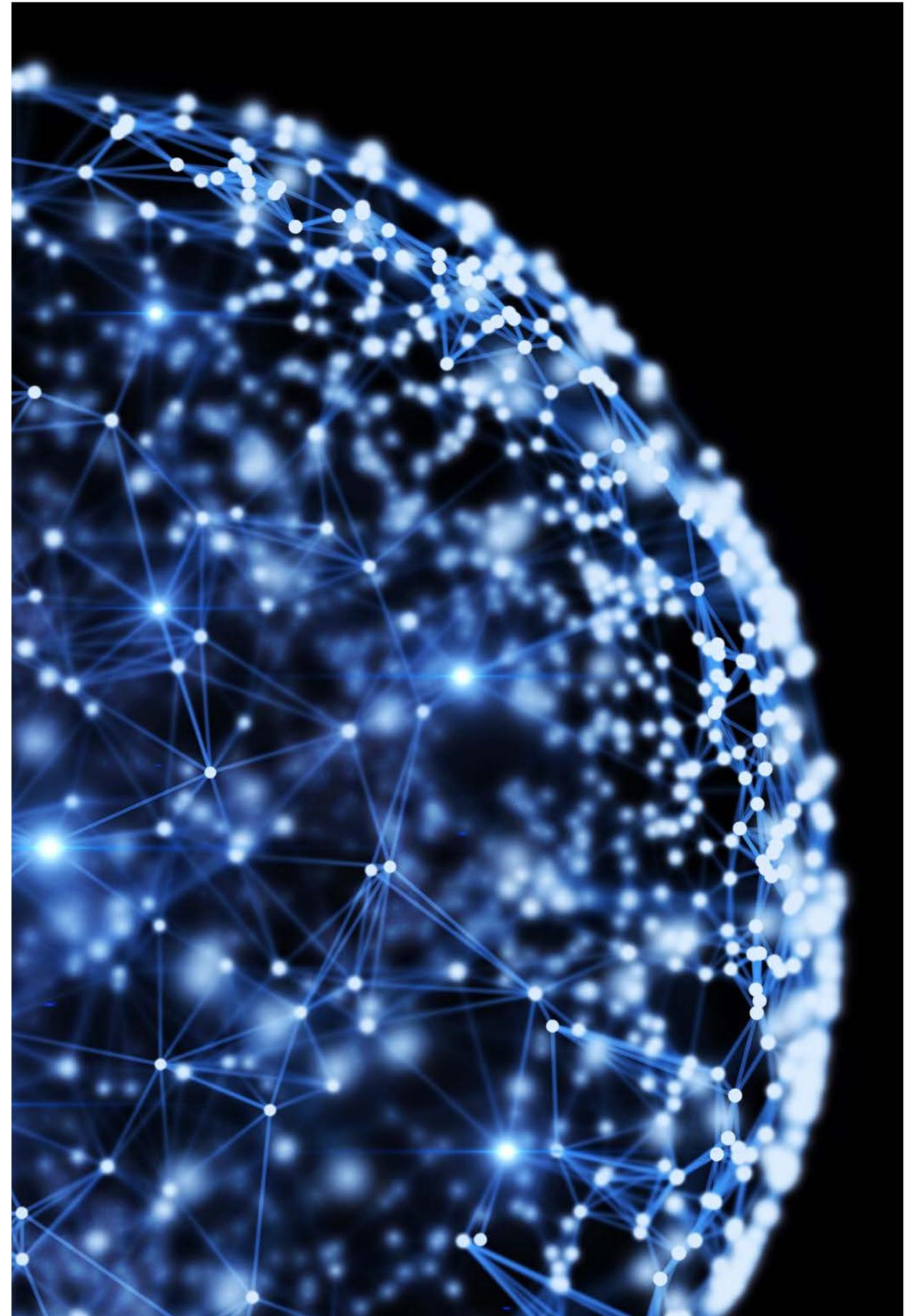
2) Internal cooperation

2.1 As IEC's conformity assessment systems are based on IEC standards, as far as possible, all efforts shall be made to ensure that IEC standards are fit for use by IEC conformity assessment systems. Currently there are a lot of conformity assessment documents that supplement IEC standards. Therefore, IEC shall **establish close links and working procedures for closer cooperation between its two pillars of standardization and conformity assessment to reduce conformity assessment documents** to a minimum.

2.2 Time to market is one of the key issues for industry. Efficient and resource-saving testing procedures can be facilitated by common (basic) tests. This will avoid the need for different tests on the same aspects for different IEC standards. The IEC should encourage its TCs to create a toolbox for basic tests which can then be directly applied in IEC standards.

2.3 Currently IEC standards are transferred manually into test procedures. To reduce time to market, the IEC should offer **machine-readable standards** (in addition to human-readable standards) that can be directly integrated in testing equipment. A first promising approach was demonstrated by the "digital twin" at the Reinvention Laboratory show.

6. Preservation of our Core Values

Digitalization will not call into question the established values of standardization. Creating international safety standards is a key task of the IEC and will be a key task of the IEC in the future.

Full digitalization is essential if the IEC is to continue to survive and to serve the expectations of its stakeholders. Bearing this in mind, however, the IEC should not forget its history and its key mandate, both of which ensure its worldwide reputation and acceptance amongst its stakeholders, especially regulators. Safety standards have been one of the IEC's cornerstones and will remain so in the future.

Safety standards cannot be elaborated in "fast track procedures" but must be based on the **involvement of all parties concerned**. For this purpose the **national delegation principle** shall be kept and safety standards shall be elaborated and approved under **full consensus.**

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