STRATEGIC BUSINESS PLAN – ISO/TC 114

Executive summary

The task of the ISO/TC 114 - Horology is to manage all standards related to horology, those concerning watches, miniature clocks and clocks.

Whatever they are mass production fashion articles or luxury exclusive pieces; they may include mechanical or electronic movements, feature basic functions only or incorporate complications.

Our committee is not involved in frequency standards such as cesium oscillators, nor data transmission systems.

Apart from their primary function of displaying the time, watches are often prestige objects or jewelry pieces. The external parts – case and wristlet – belong to an important domain of standardization because they concern both quality and health criteria, as these components are in direct and prolonged contact with the skin.

Standardization in watch making is mainly a matter of interest for designers and manufacturers of watches and movements, components producers, assembling companies, and those active in the distribution and retail sectors. The relationship with the end-user is getting more importance because of aspects associated with quality, health and environment respect.

The future challenges of the ISO/TC 114 and its subcommittees arise in this field too.
1. Introduction

1.1 ISO Technical Committees and activities' schedule
Updating the schedule of the activities of ISO Technical Committees (ISO/TC) is important. The aim is to align the work program with business environment needs and trends. It allows the technical committees to define priorities amongst various projects, to identify the expected benefits of making International Standards available and to ensure adequate resources to projects throughout their development.

1.2 International standardization, the ISO job
The foremost aim of international standardization is to facilitate the exchanges of goods and services through the elimination of technical barriers to trade, while defending social and economic interests at the international level.
2. Work environment of ISO/TC 114

2.1 Introduction

The political, economic, technical, regulatory, legal and social dynamics describe the work environment of the industry sector, products, materials, disciplines or practices related to the scope of Technical Committees. They may significantly influence the development processes of standards, as well as their content.

2.1.1 General context

The task of the ISO/TC 114 is to manage all standards in relation to horology, in other words timepieces, and more particularly watches, table and wall clocks.

ISO/TC 114 is considering mechanical as well as electronic movements and its activity covers all kind of timepieces, whatever they are fashion or luxury articles.

Our committee is not involved in frequency standards such as cesium oscillators, nor data transmission systems.

The ISO/TC 114 will have to consider smartwatches in the global watch market. However, the standardization activities about connecting technologies are dealt in other committees, under IEC.

Standardization in watch making field relates essentially to components manufacturers, assembling companies, and those active in the field of distribution and retail sectors. However, relations with the final consumer is of great importance.

The existing label standards on watch-making, namely ISO 764, ISO 1413, ISO 3159, ISO 6425 and ISO 22810 will be kept as label standards under future revisions. However, most of standards do not follow the label path, which allow a greater degree of freedom for the actors, depending on the market segments they are active on.

The content of these standards is mainly intended to the manufacturers and laboratories, which are in charge of verifying the characteristics of the products. The introduction of these standards cleaned up the market, making it possible to act against unfair competition.

Today, the final consumer is increasingly informed to the features of the proposed product and tends to compare the market’s offer on an objective basis. Consumer shall therefore also be considered as one of the partners in this market.

2.1.2 A global market

The wristwatch market is the main market area covered by the activities of ISO/TC 114. Its worldwide production was estimated to about 1.2 billion pieces in 2020 by the Federation of the Swiss Watch Industry. This market is considered made up of segments in a pyramid-like structure. The base of the pyramid consists of mass production articles while the top of it represents exclusive luxury pieces.

Clocks and miniature clocks yearly market is said to be about 400 million of pieces. According to Grand View Research, the global smart clock market size alone was valued to about 470 million US$ in 2018 and is projected to expand at a CAGR of 25% from 2019 to 2025.

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2.1.3 Ten main actors and three domains

1. Brands
2. Suppliers of components for watch movements powered by electrical energy
3. Suppliers of components for watch movements powered by mechanical energy
4. Makers of watch movements powered by electrical energy
5. Makers of watch movements powered by mechanical energy
6. Suppliers of external parts
7. Makers of completed watches/clocks
8. Distributors
9. Retailers
10. Wearers/consumers

To date, the existing standards mainly concern the following domains:

- Quality
- Interchangeability
- Safety

Interest in existing standards for each of those actors and domains is shown in Table 1.
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<th>International Standards</th>
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2.1.3.1 Market structure: suppliers/manufacturers
Apart from makers of complete watches, many small and medium companies supply components, especially exterior parts of watches. Electronic components and batteries are supplied by big companies, many of which achieve only a small part of their sales on the watch market.

As Table 1 shows, standards play an important role in relations between brand components suppliers and the makers of movements or finished watches. They relate in particular to dimensional criteria to assure high quality assembly, so that the components having to be assembled require only a minimum of adjustment, or even without.

The standards applicable to watch cases and their accessories define the conditions whose precious metal coatings must satisfy for this type of components.

The standards for batteries concern both the measurement of the stored energy and the dimensions of the cells.

The standards relating to the symbolization of the control positions, the wrist-chronometers with spring balance oscillator and the accuracy of quartz watches, facilitate the evaluation of the precision of the assembled movements which are then supplied to the manufacturers responsible for their casing-up. They also allow defining the final product.

2.1.3.2 Market structure: consumers
The term “consumer” is used to describe all actors who are not involved in the production of the watch as such. They may include a chain of department stores; a mass retailer specialized in the horological domain, retailers or the final consumer. For these partners of the watch market, two main aspects must be taken into consideration: the quality of the watch and its after-sales service.

Therefore, the most important standards at this stage are those used to evaluate quality and resistance to wear and those, which guarantee interchangeability at the after-sales service level.

The label standards are the ones to the major interest to the final consumers.

2.1.3.3 Market structure: elements of influence
Following the veritable growth in importance of the electronic watch during the 1970th and 1980th years, the product is experiencing a period of gradual evolution during which additional functions such as communication with external products, like smartphones appearing.

Matters concerning quality and reliability will play an increasing role in the coming years. These issues will have to be dealt by taking care to make the information available to the final consumer.
3. Expected benefits of the works of committee ISO/TC 114

Our technical committee wishes to be an active partner in organizations contributing to the development of international relationships in the horological field. Its goal is to contribute to the following six sectors:

- facilitate the supply of products with defined characteristics and evaluated performances according to clearly established criteria which are recognized by professionals, through standards which define a terminology and minimum criteria to be met on the basis of standardized tests
- improve the quality of the information made available to the final consumer
- improve the reliability of the products placed on the market
- promote the interchangeability of certain watch components such as bracelets and glasses, by defining reference dimensions
- facilitate the worldwide trade of watch components in relation to the trend of markets globalization
- reduce the costs and improve the quality, both for products and services

4. Representation of the main actors of ISO/TC 114

https://www.iso.org/committee/51734.html

International meetings are held every two years or other meetings (SC and/or WG) are organized more often when needed (physically or by videoconference).

5. Objectives of ISO/TC 114

Based on above mentioned considerations, ISO/TC 114 has defined the following objectives for its future works, taking also into account the resolutions of the last international meeting.

The current projects of the active Working Groups and Subcommittees are listed hereafter.

**WG 1 Requirements for watch batteries**

Current projects are related to IEC 60086-3 standard for primary batteries and IEC 61960-4 standard for lithium secondary batteries.

We are working in close cooperation with our colleagues of IEC/TC 35 and IEC/SC 21A on those projects.

**WG 5 Watches made of hard materials**

The main task of this working group was the finalisation of the draft standard ISO 18684 - Timekeeping instruments — Watch external parts made of hard material — General requirements and test methods and the FDIS vote took place in late 2019.

Following the publication in February 2020 of the standard ISO 18684 - Timekeeping instruments — Watch external parts made of hard material — General requirements and test methods, this working group has been disbanded.

**SC 3 Water-resistant watches**

The work of this subcommittee is mainly summarized by the studies concerning the potential for improvement of ISO 22810 - Horology — Water-resistant watches.
SC 5 Luminescence
Both standards related to Radioluminescence (ISO 3157 & ISO 4168) have been withdrawn, this SC is working on the revision of the ISO 17514 (Time-measuring instruments - Photoluminescent deposits - Test methods and requirements) standard.

SC 9 Technical definitions
This subcommittee was reactivated in 2021 and is working on the potential revision of ISO 6426-2 standard.

SC 12 Antimagnetism
Work on the revision of ISO 764 - Magnetic resistant watches continued at the Marseille congress and throughout the rest of the year with the ISO/FDIS 764 vote. Many discussions have been held on whether or not to include in the standard watches that reset themselves after stopping or drifting when exposed to magnetic fields. Despite the efforts of persuasion made by the Swiss delegation, this was not validated by the other delegations.

Other discussions focused on "enhanced" magnetism resistance, the dimensions of movements to be considered and the different markings for "magnetism resistant" watches. Work on the revision of ISO 764 - Magnetic resistant watches was completed with its publication in February 2020 and this subcommittee is now on standby.

SC 13 Watch-glasses
The ISO 14368-4 - Mineral and sapphire watch-glasses — Part 4: Anti-reflective treatment was published in August 2020. However, given the work of the Swiss WG on complementary tests, a request for revision was presented in May 2021. Additional tests according to the Swiss proposals will be done and assessed within ISO/TC 114/SC 13/WG 1.

SC 14 Table and wall clocks
The ISO/DIS 23346 vote took place at the end of 2019 and work on ISO 23346:2020 - Radio-controlled clocks — Signal receiving measurement method was completed with its publication in July 2020. In the absence of a new project, this subcommittee may be put on standby.

6. Factors affecting the achievement of the ISO/TC 114 programme
As initially explained, the watch industry covers a very wide range of products. In the field of performance evaluation, it is therefore difficult to develop standards which are capable of covering the whole range of products. It is also essential that the proposed tests lead to reproducible results and are applicable worldwide by all companies.