



ISO/TC 114 - STRATEGIC BUSINESS PLAN

Executive summary

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

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

Apart from their primary function of displaying the time, watches are often prestige objects or jewellery pieces. The external parts - case and bracelet - 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 from these fields too.

Introduction

1.1 ISO technical committees and business planning

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 and the role of ISO

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.

Business Environment of the ISO/TC 114

1.3 Description of the Business Environment

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.

1.3.1 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, whether they are fashion or luxury articles.

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

Standardization in the watch making field relates essentially to components manufacturers, assembling companies, and those active in the field of distribution and retail sectors, but also in after-sales services. In addition, relations with the final consumer is of great importance.

Some standards, like ISO 764, ISO 1413, ISO 3159, ISO 6425 and ISO 22810, specify a marking on the watch which implies that marked watches shall satisfy requirements of those standards. However, most standards do not specify marking, which allow a greater degree of freedom for the actors, depending on the market segments they are active on.

The content of the ISO/TC 114 standards is mainly intended for 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 about the features of the proposed product and tends to compare the market's offer on an objective basis. The consumer shall therefore also be considered as one of the partners in this market.

1.3.2 A global market

The wristwatch market is the main market area covered by the activities of ISO/TC 114.

This market is considered to be 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.

1.3.3 Eleven main actors and three domains

The following list includes the various actors and domains related to the watch industry:

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 complete watches/clocks
8. Distributors
9. Retailers
10. Wearers/consumers
11. After-sales services

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

- Quality [Q]
- Interchangeability [I]
- Safety [S]

Interest in existing standards for each of those actors and domains is shown in Table 1.

Table 1 - Relation to actors and domains

International Standards	1	2	3	4	5	6	7	8	9	10	11	Q	I	S
ISO 764 Horology - Magnetic resistant watches	X	X	X	X	X	X	X	X	X	X	X	X		X
ISO 1112 Horology - Functional and non-functional jewels	X			X	X	X	X				X	X		
ISO 1413 Horology - Shock-resistant wrist watches	X	X	X	X	X	X	X	X	X	X		X		X
ISO 3158 Timekeeping instruments - Symbolization of control positions	X	X	X	X	X	X	X					X		
ISO 3159 Timekeeping instruments - Wrist-chronometers with spring balance oscillator	X		X	X	X		X	X		X	X	X		
ISO 3160-1 Watch-cases and accessories - Gold alloy coverings - Part 1: General requirements	X					X	X					X		
ISO 3160-2 Watch-cases and accessories - Gold alloy coverings - Part 2: Determination of fineness, thickness, corrosion resistance and adhesion	X					X	X			X		X		
ISO 3764 Timekeeping instruments - Movements - Types, dimensions and nomenclature	X	X	X	X	X	X	X						X	
ISO 3765 Timekeeping instruments - Wristwatches - Dimensions of bracelet-to-case fastening elements	X					X	X	X	X	X	X		X	
ISO 6425 Horology - Divers' watches	X					X	X	X	X	X	X	X		X
ISO 6426-1 Horological vocabulary - Part 1: Technical and scientific definitions	X			X	X	X	X	X	X					
ISO 6426-2 Horological vocabulary - Part 2: Technical and commercial definitions	X	X	X	X	X	X	X	X	X	X				
ISO 10552 Timekeeping instruments - Crowns and sealed tubes - Designs and dimensions	X					X	X				X	X	X	
ISO 10553 Horology - Procedure for evaluating the accuracy of quartz watches	X	X		X			X				X	X		
ISO 13074 Analogue quartz clocks - Fitting dimensions of movements to hands	X	X	X	X	X	X	X				X		X	
ISO 12819 Methods of evaluation of the battery life of a battery-powered watch	X			X			X					X		
ISO 14368-1 Mineral and sapphire watch-glasses - Part 1: Dimensions and tolerances	X					X	X				X		X	
ISO 14368-2 Mineral and sapphire watch-glasses - Part 2: Assembly to the case by adhesive or using a gasket	X					X	X				X	X		
ISO 14368-3 Mineral and sapphire watch-glasses - Part 3: Qualitative criteria and test methods	X					X	X				X	X		
ISO 14368-4 Mineral and sapphire watch-glasses - Part 4: Anti-reflective treatment	X					X	X	X	X	X	X	X		
ISO 14856 Timekeeping instruments - Wristwatch-cases - Fixing dimensions of non-spring-bar types	X					X	X			X			X	
ISO 16253 Watch-cases and accessories - Vapour phase deposited coatings	X					X						X		
ISO/WD 16359 Horology — Harmonized practices to demonstrate wrist-watches chemical regulatory compliance	X					X	X	X		X				
ISO 17514 Time-measuring instruments - Photoluminescent deposits - Test methods and requirements	X					X	X			X		X		X
ISO 18684 Timekeeping instruments - Watch external parts made of hard material - General requirements and test methods	X					X	X			X		X		
ISO 19235 Analogue quartz clocks - Timing accuracy	X					X	X					X		
ISO 22810 Horology - Water-resistant watches	X					X	X	X	X	X	X	X		
ISO 23160 Watch cases and accessories - Tests of the resistance to wear, scratching and impacts	X					X	X					X		
ISO 23346 Radio-controlled clocks - Signal receiving measurement methods	X			X			X					X		
IEC/ISO 60086-3 Primary battery - Part 3: Watch batteries	X	X		X			X				X	X	X	
IEC/ISO 61960-4 Secondary battery—Part4 Watch batteries	X	X		X			X				X	X	X	

2.1.3.1 Market structure: suppliers/manufacturer

Apart from makers of complete watches, many small and medium companies supply components, especially external 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 none.

The standards applicable to watch cases and their accessories define the conditions that 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 for the final product to be defined.

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 shall 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 standards that specify markings are the ones of major interest to the final consumers.

2.1.3.3 Market structure: elements of influence

Following the vertiginous growth in importance of the electronic watches during the 1970s and 1980s, the product is experiencing a period of gradual evolution during which additional functions appear such as communication with external products, like in the case of smartphones.

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.

Benefits expected from the work of the 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 watches and watch components in relation to the trend of market globalization
- reduce the costs and improve the quality, both for products and services

Representation of the main actors of ISO/TC 114

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

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

Objectives of the ISO/TC and strategies for their achievement

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

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

ISO/TC 114 - Horology

- There is an intention to increase the number of members, mainly P-Members, in order to guarantee an optimal representation of worldwide interested parties.
- Evaluate the opportunities to use the "Online standard development" tool.
- Study a new organization of the TC, according to the needs of the market and including a closer collaboration with liaisons TC.

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.

ISO 12819 standard will be revised by adding secondary batteries.

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

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 the ISO 6426-2 standard.

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

Based on the decision taken during the ISO/TC 114 congress in 2023, the new project related to maximum allowable values for the current consumption and energy consumption grade on analogue quartz clocks was accepted and work will start in the following months.