



**BUSINESS PLAN**  
**ISO/TC 214**  
**Elevating work platforms**

**EXECUTIVE SUMMARY**

The major fields of ISO TC 214 cover nomenclature, design calculation, stability, construction, test methods, safety, operation, inspection, and maintenance for Mobile Elevating Work Platforms (MEWP) and Mast Climbing Work Platforms (MCWP). The market size of the elevating work platforms globally is approximately US \$5 billion range. The market size for MCWP is much smaller than MEWP is concentrated in Europe but the North American markets are growing and there are significant manufacturers in Canada. Consequently, the committee's environment is worldwide with concentration in Europe and North America. Asia is also a significant market and we expect Asian committee participation to increase. The international market is now improving after several poor economic years and the participation in TC 214 is expected to increase.

The work of TC 214 provides a reference and target for MEWP and MCWP standards writers throughout the world. This will prove to be beneficial during the rewrite standards such as EN 280 and A92 standards. The main benefit of the work of TC 214 is to provide a means for one worldwide standard. The U. S. ANSI committee members are now getting active with the ISO 214 committees. The work of TC 214 is important because in order to achieve full global trade with limited volumes of machines it is an absolute imperative that there be a global standard. Therefore, continuing to adapt the TC 214 portfolio of standards for new technology must be an ongoing objective of the TC. A major benefit of the TC 214 standards will be to enable global trade with the harmonisation of the different national standards and where national or regional standards have not yet been developed to develop global standards. Global standards provide substantial opportunities for cost effective development of elevating work platforms. Development and design costs are significant and developing product to different national or regional standards increases the cost of the machinery to all citizens of the globe.

TC 214's objective is to have countries that have safety requirements for elevating work platforms to accept conformity to ISO standards as meeting their regulatory requirements. It is our goal that the basic European Norms (EN) for elevating work platforms and the ANSI A92 standards adopt TC 214 standards. TC 214 will urge other countries to dual-designate the TC 214 standards as national standards. In South America, we will eventually work with Mercusor to achieve regional adoption of TC 214 standards. Other countries such as Russia, China, Australia, Canada, Japan, South Africa, and the USA are actively engaged in the development of TC 214 Standards. The objective is to have each country adopt the ISO TC214 standards as their national standards.

## 1 INTRODUCTION

### 1.1 ISO technical committees and business planning

The extension of formal business planning to ISO Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends and to allow ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

### 1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: [ISO](#) (International Organization for Standardization) is responsible for all sectors excluding Electrotechnical, which is the responsibility of [IEC](#) (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of [ITU](#) (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 140 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the [International Standard](#).

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee (ISO/TC), representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its [Technical Committees](#) are also able to offer the ISO Technical Specification (ISO/TS), the ISO Public Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO products represent lower levels of consensus and have therefore not the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national members. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.

## 2 BUSINESS ENVIRONMENT OF THE ISO/TC

### 2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of this ISO/TC, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

The elevating work platform machinery industry has achieved a certain level of maturity in that the changes in machinery design are more evolutionary, rather than revolutionary. Even so there is continual progression of new technologies into the machinery. Currently the new technology involves the addition of electronic devices to the machinery.

In the initial years of ISO TC 214, the major emphasis was to harmonise the various national standards that dealt with design calculation, stability criteria, construction, safety, examination and test methods for the machines. Very quickly, the participants in ISO TC 214 recognised the need for nomenclature and standards so as to promote communication and facilitate a level playing field between the competitors and the customers of the machinery. The interest in the safety of the machinery quickly became a high priority and various countries shared their established or drafted national safety requirements. TC 214 participants responded with work items to address the safety principles, inspection, maintenance and operation.

With the growth of society's interest in the environment and safety, projects for TC 214 have been undertaken to harmonise the safety requirements. Specific efforts are being undertaken to evaluate the proposed TC 214 standards to ensure that its standards will be suitable for use in government regulatory requirements. As the portfolio continues to develop, a substantial number of new work items are being undertaken. These standards must be developed in a timely manner to meet the regulatory needs. The ISO TC 214 plenary decided to use the European draft PrEN280 as a starting point for ISO 16368 (Mobile elevating work platforms - Design calculations - Stability criteria - Construction - Safety - Examination and Tests). We used another European draft for developing ISO 16369 (Elevating Work Platforms - Mast Climbing Work Platforms). The members of ISO TC 214 gave due consideration to the input from all of the delegations and their national standards.

The dynamics within the elevating work platform industry are that the number of manufacturers continues to decline through mergers and acquisitions. Whereas at the formation of TC 214 there were multiple manufacturers in many countries, the consolidation of these as subsidiaries or affiliates of larger global or international manufacturers has occurred. This international market is now improving and the participation in TC 214 is expected to increase will continue to increase.

The result of the many changes in the industry since the formation of TC 214 is that global standards are of increasing value to the industry, and to governments and society. National standards development has not slowed as it has in other machine industries like the earth-moving machinery. However, National and regional adoption of TC 214 standards is the goal for the future. In order for this to happen we need to develop a strong and widely accepted standard. Progress is amazing given that TC 214 was founded in 1996.

Significant support for TC 214 comes from the manufacturers. In addition there are a number of test organisations and notified bodies, as well as some government agencies participating in the standards development projects. Because elevating work platform machinery is capital goods as distinguished from consumer goods, consumers have not found participation a rewarding use of their resources.

## ***2.2 Quantitative Indicators of the Business Environment***

The following list of quantitative indicators describes the business environment in order to provide adequate information to support actions of the ISO/TC:

As the market for elevating work platforms depends significantly on the growth of the world economy, the growth of the elevating work platform market closely follows economic growth. Housing starts are one of the important factors affecting the market for elevating work platforms. Industrial growth is likewise a significant factor. Public works projects such as new infrastructure for bridges, airports, power stations, dams, etc. provide significant stimulation to the market. In recent years governments have limited the growth of new projects causing the market to be less robust. Many of the larger machines are used in large construction applications. Over the last few years there has been very low growth in mining and in petroleum because of the lack of growth of world economies. However, there are now signs that things will be improving.

As the elevating work platform market is global, a major interest in the need for ISO TC 214 standards is to obtain global standards. The work that elevating work platforms must do should not be limited by national boundaries. Construction usually requires the same type of machinery regardless of the location on the earth.

People, who have the same needs for operational performance and for safety regardless of location on the globe, operate machines. Thus, it is only reasonable that global standards are what are needed to affect an efficient market and provide for the needs of the operators and support people for elevating work platforms.

With the current desires of society, reducing the amount of new expansion of businesses, a considerable amount of the market deals with the demolition of existing infrastructure and replacing with new facilities. Thus, roads are being rebuilt rather than new being created. Inner cities are being revitalised with new buildings in place of old, rather than expansion to suburbs.

The manufacturing industry is essentially bifurcated between a limited number of large enterprises and then a substantial number of small enterprises. The small enterprises occupy niche markets for specialised machines for quite specific applications, or serve only a limited geographical area. Many of these smaller enterprises are merged into the larger enterprises as such opportunities develop.

The size of the elevating work platforms globally is in the US \$5 billion range. The businesses are principally located in Europe, Japan and the USA. Most of the manufacturers headquarters their operations in the US. Many of the enterprises have started expanding to some of the developing countries. Major global enterprises build products in a number of countries and then export globally. Global enterprises use the technology wherever it is located to develop the machines and then search for the best locations to manufacture product. Some of the products are only produced in low volume and thus global exporting is the only way to keep production volumes efficient. Other products are produced in high volumes with demands high in several continents.

Most of the major global enterprises do not extensively use ISO standards for marketing and regulatory purposes since only a few ISO TC 214 standards existed when the regulations were written. In some instances, national standards that are technically equivalent to ISO standards are used. Some of the regulatory schemes in place go back to the early 1970s, prior to the point in time when the TC 214 was founded.

Our goal is to have most of the developed countries that have safety requirements for elevating work platforms to accept conformity to ISO standards as meeting their regulatory requirements. Because of the fact that ISO standards are not mandatory and TC 214 was founded only in 1996, Europe invoked the European Standards Committee, (CEN) as a means to provide harmonised standards across Europe over 18 years ago. It is our goal that the basic European Norms (EN) for elevating work platforms should reference TC 214 standards after the ISO standards are published. TC 214 will urge other countries to dual-designate the TC 214 as national standards. In South America, we will eventually work with Mercusor to achieve regional adoption of TC 214 standards. Other countries such as Russia, China, Australia, Canada, Japan, South Africa, and the USA are actively engaged in the development of TC 214 Standards. The goal is eventual national adoption of the standards from ISO TC214.

### **3 BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC**

The work of TC 214 is important because in order to achieve full global trade with limited volumes of machines it is an absolute imperative that there be global standards. Therefore, continuing to adapt the TC 214 portfolio of standards for new technology must be an ongoing objective of the TC. The infusion of electronics into elevating work platforms will develop at a faster pace. Electronics are used to operate vital systems on some machines. Electronic devices and software will eventually provide substantial benefit to the performance of the machines and provide more efficient use of the machine assets in industrial and construction projects.

The initial major thrust of the TC 214 standards will be to enable global trade with the harmonisation of the

different national standards and where national or regional standards have not yet been developed to develop global standards. For years a substantial percentage of the work projects have dealt with the aspects of safety for the operator and personnel who service the machinery.

Global standards provide substantial opportunities for cost effective development of elevating work platforms. Development and design costs are significant and as such developing product to different national or regional standards increases cost of the machinery to all citizens of the globe.

## **4 REPRESENTATION AND PARTICIPATION IN THE ISO/TC**

### **4.1 Countries/ISO members bodies that are P and O members of the ISO committee**

#### **4.2 Analysis of the participation**

The manufacturing industry is principally located in Europe, Japan and the USA. Some manufacturing is done in Australia, China, Russia, Asia-Pacific countries and some Central European countries. The balance of participation between the main countries is quite good. Most significant participating countries are USA, Canada, Japan, Germany, Sweden, UK, Italy, South Africa, and France. Australia, Finland, Netherlands and Russia participate as well. China is an example of a country where the TC 214 desires to obtain active participation and China has indicated they will participate. What will be done in upcoming years is to work with a developing country such that they can host the international meeting. This was done by other ISO TCs with Russia in 1999 and with Brazil in 2001. France will host the next meeting scheduled for 2005. Encouraging developing countries to host will enable the TC to bring more participants from the developing host country into the process such that they are able to learn of the work.

## **5 OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT**

### **5.1 Defined objectives of the ISO/TC**

The basic objectives of TC 214 are to provide the portfolio of standards for elevating work platforms to support the manufacturers need for global trade. A further objective is to recognise the responsibility of manufacturers to provide machinery that meets the need of society with respect to health, safety and the environment and, the needs of regulators for their accountability for health, safety and environmental concerns for machinery.

Within the global trade objective is the need to provide a level playing field between manufacturers in the specification of the performance of machines. Only when adequate standards that can quantify the performance of machines exist, are purchasers able to make informed decisions as to the value of the desired machine. Because elevating work platforms are work machines used by customers to earn an income, purchasing decisions must be made on machine performance and the ability of the machinery to satisfy the needs of the customer.

The elevating work platform industry believes that it can adequately determine the appropriate health, safety and environmental requirements for its machines through the TC 214 standards development process. Thus, government regulation is only secondary when the efforts of the TC 214 are not sufficient to provide standards that meet the needs of society.

### **5.2 Identified strategies to achieve the ISO/TC's defined objectives**

The success of ISO TC 214 may be unparalleled since it is a relatively new TC with only a 8 year history and yet several massive standards have been published and one has already been updated. It took over 18 years to get a consensus on EN280 only within Europe and TC 214 used this work to build an international standard after only a few critical changes. The main driver of the TC is to publish a few high quality standards in the next several years. The periodic review of standards is now currently a project within the TC. The second driver of the TC workload is the adaptation of new technology into the machinery.

Because the industry is spread around the globe, developing global standards through ISO is the basic strategy. Then regions or nations can then adopt those global standards to fit their specific local customs or legal systems.

The development of full ISO standards provides the best solution for TC 214. Other ISO deliverables are not as desirable because there is a need to have as much consensus as is reasonable and practicable for the standards. While speed to produce the necessary standards is desired, it is not the principal factor for the standards portfolio.

The TC 214 is organised with two working groups. Most of the standards development work is conducted within the working groups. They do the work directly through the use of the working groups. Where projects may cross over the scopes of the working groups, the TC will assign responsibility for management purposes.

The main role of the TC is management of the working groups, approval of new work items and approval or modification of the working group proposals. This ensures appropriate co-ordination of projects and coherence with the TC 214 scope.

## **6 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME**

The only issue that presents a challenge is that the participants who have the necessary expertise are also very busy people in their normal work positions. Thus, the time available to work on the development of ISO standards is severely limited, delaying the production of drafts and the review and commenting on new proposals. This will not get any better unless the world economy significantly recovers to a point that reasonable profit is generated from the elevating work platform businesses. Government, social, fiscal, monetary and taxation policies are major factors in the vitality of the elevating work platform industry.

As the technology becomes more advanced, the need for research, development and verification will also become more challenging. A significant challenge will be for participants to gain approval for the industry, or government to fund such work in order to produce sound technical standards.

## **7 STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC**

This section gives an overview of the ISO/TC's structure, scopes of the ISO/TCs and any existing subcommittees and information on existing and planned standardization projects, publication of the ISO/TC and its subcommittees.

### **7.1 Structure of the ISO committee**

### **7.2 Current projects of the ISO technical committee and its subcommittees**

### **7.3 Publications of the ISO technical committee and its subcommittees**

## **Reference information**

**[Glossary of terms and abbreviations used in ISO/TC Business Plans](#)**

**[General information on the principles of ISO's technical work](#)**