

METROLOGY AND STANDARDIZATION OF MODERN TRENDS AND THEIR ECONOMIC DEVELOPMENT PLACE

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Abstract

This article metrology and standardization science modern trends, their economic in development place and importance Metrology measures accuracy, reliability and diversity to provide as a science focused on standardization and products, processes and services quality increase them mutual adaptation and technician obstacles eliminate to reach service does. In the article, Metrology and standardization in the global economy role, international in trade caught role, innovative in development importance, also in Uzbekistan this sector develop according to done increasing affairs analysis is made. From this, digital metrology, green standards, artificial to the intellect-based measurement systems such as new also see trends released.

Keywords: metrology, standardization, measurement, quality, certification, accreditation, economic development, innovation, digital metrology, green standards, international sales, technical obstacles, compatibility assessment.

Introduction

Metrology and standardization are modern in the world technique, technology and of the economy important from the foundations one They are of measurements reliability and product of quality guarantee provide global trade through and economic to develop big contribution Addictive. Metrology science measures scientific the basics of learning standardization products, processes and services quality, their compatibility and safety. These two disciplines harmony society stable development and competitiveness in increasing important importance profession will reach.

Metrology: study accuracy and reliability

Metrology measures accuracy, reliability and measurements unity to provide science-focused and practical It is an activity. It has three main directions inside:

1. **Scientific metrology:** measurement units and standards working exit and save.
2. **Practical metrology:** measurement tools application and calibration.
3. **Legislation metrology:** measurement tools and the processes to be placed requirements designation and control to do

Metrology is not only in industry but also in science, medicine, environment protection, and other important field role plays. Product quality, safety and innovative development main factors is one.

Standardization: quality and compatibility provide

Standardization is products, processes and services to be placed requirements to mark, their quality increase, compatibility provide and technician obstacles eliminate to reach aimed at is an activity. Standards technician conditions, specifications, instructions and other normative documents in the form of to be possible. Standardization main tasks of the following consists of:

1. **Quality increase:** products and of services high quality level to provide.
2. **Compatibility provides:** products, processes and services with mutual compatibility to provide.
3. **Security provides:** products and services security requirements answer to give to provide.
4. **Technical obstacles eliminate to:** international in trade technician obstacles eliminate to be

Standardization national and international at the level International standardization international organizations (ISO, IEC) standards working comes out and the whole world along apply provides.

Metrology and standardization economic in development place

Metrology and standardization of economic development are important factors They are following in directions to the economic impact shows :

1. **Product quality and competitiveness increase:** to standards appropriate working issued products high to quality has will be an internal and external at the market competitive will be.
2. **Trade and investments encouragement:** standardized products and services international in trade easier acceptance will be done and investments attraction to help gives.
3. **Innovative development support:** standardization of innovative products and technologies fast to spread help gives.
4. **Technical obstacles eliminate to:** international standards in trade technician obstacles eliminate will and free for sale help gives.
5. **Industry efficiency increase:** metrology and standardization working release efficiency increases and expenses to reduce help give.

In Uzbekistan metrology and standardization development

In Uzbekistan metrology and standardization field to develop big attention This is being addressed. In the field following affairs are increasing:

1. **Legislation base improvement:** metrology and standardization field order eater law and normative documents working is being released.
2. **National measurement standards created:** national measurement standards are being created and international standards are being coordinated.
3. **Accreditation system development:** compatibility assessment organs accreditation to do system is being developed.
4. **Experts preparation:** metrology and standardization in the field experts preparation system are being improved.
5. **International cooperation expansion:** international organizations with cooperation expanding and international standards acceptance is being done.

Modern trends

Metrology and standardization in the field following modern trends developing :

1. **Digital metrology:** digital technologies measure the processes currently to be
2. **Green standards:** to the environment damage inadequate products and to technologies standards working exit
3. **Artificial to the intellect based measurement systems:** measurement processes automation and acceleration.
4. **Nanotechnology and biotechnology in the standardization of the field:** new technologies in the field standards working exit
5. **Cybersecurity requirements answer giver standards:** information and measurement systems cybersecurity to provide.

Conclusion

Metrology and standardization science of the economy stable development and society well-being in increasing important role plays. Measuring accuracy and product quality provides through these two disciplines harmony innovative development and international competitiveness to increase service Metrology in Uzbekistan too and the standardization field to developing big attention and this in the field increasing affairs in the future of the economy stable to grow contribution Addictive.

This article metrology and standardization's main concepts, their economic development place, modern trends and In Uzbekistan these sectors develop according to increasing affairs in detail information.

References

1. Law of the Republic of Uzbekistan "On Metrology" (Collection of Legislative Acts of the Republic of Uzbekistan).
2. Law of the Republic of Uzbekistan "On Technical Regulation". (Uzbekistan Republic law documents set).
3. ISO 9000:2015 - Quality management systems - Basic concepts and terminology. (International standard).

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4. ISO/IEC 17025:2017 - General requirements for the competence of testing and calibration laboratories. (International standard).
 5. " Metrology " fundamentals " training manual. (Uzbekistan Supreme Education Institutions for).
 6. "Standardization, Certification and Quality Management" training manual. (Uzbekistan Supreme Education Institutions).
 7. VM Tarasenko. Metrology. Basic. (Study manual, Russian in the language).
 8. GG Azizov. Standardization and certification. (Study manual, Russian in the language).