

STANDARDIZATION

introduction



STANDARDIZATION WITHIN NATO COURSE
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Military Centre
for Standardization, Quality
and Codification (WCNjK)



Presented by:
Anna Bździuch

Specialist of Military and Allied
Cooperation Section

standards

A body or organization that develops a standard. Standard as an adjective: standards institution; that standards. For example, A

AGENDA



- **Standards around us**
- **History of standardization development**
 - Early Beginnings
 - Industrial Revolution
 - 19th/20th Century
 - First international normalization organizations
 - ISO
- **Standard distinguishing characteristics**
 - Standardization and main assumptions
 - A Standard – definition and examples
 - Standards classification
 - Standard-developing organizations (SDOs) and examples
- **Benefits of standardization**
- **Common concerns about standardization**

*Standardization is dynamic, not static.
It means, not to stand still,
but to move forward together.*

AMERICAN ENGINEERING STANDARDS COMMITTEE YEAR BOOK,
1925

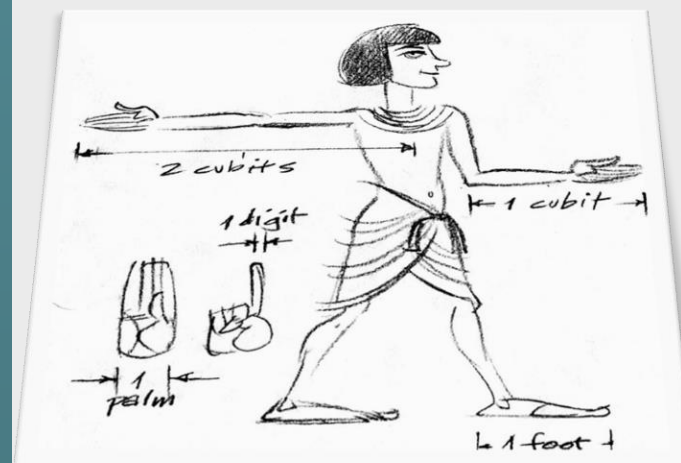
Standards around us...

- **Ensuring Safety and Reliability**
- **Promoting Interoperability and Compatibility**
- **Driving Efficiency and Innovation**
- **Supporting International Trade**



Early Beginnings

Egyptian cubit



Romans military equipment



Qin Shi Huang writing and measurement



Industrial Revolution

Eli Whitney was the first to manufacture products on a large scale with the idea of complete interchangeability of parts

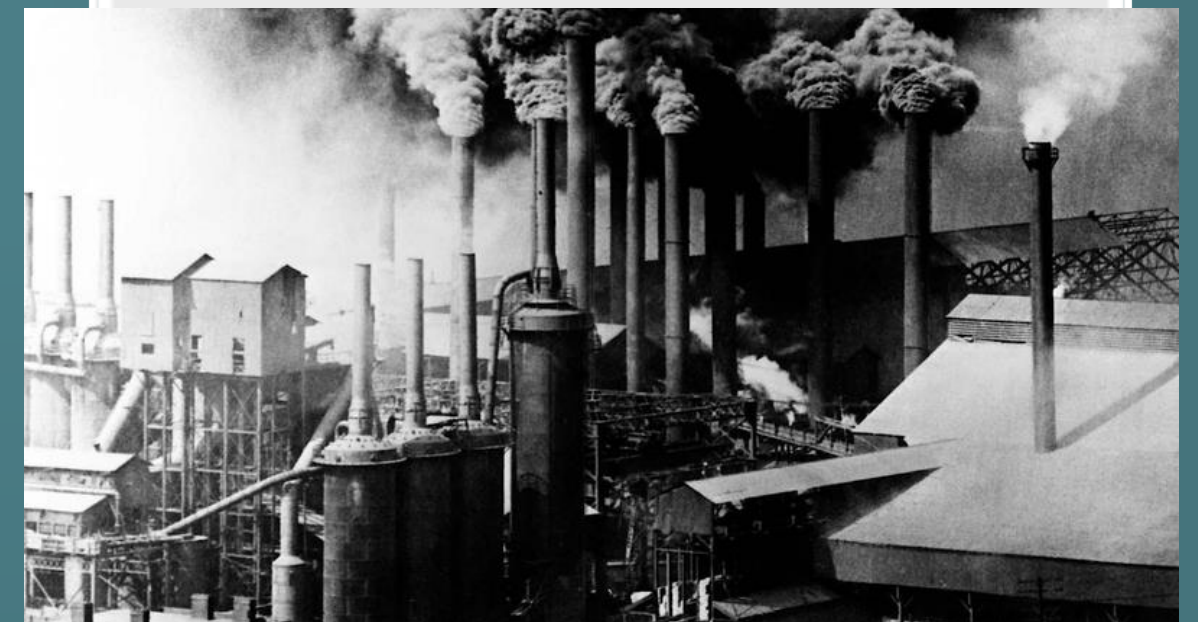


Eli Whitney (1765 - 1825)
"The Father of Standardization"



18th/19th century

First need of standards and actions during the **Industrial Revolution** due to increase use of machinery



19th/20th century

1865

The first modern international organization the International Telegraph Union (now International Telecommunication Union) was created.

1901

Several British engineering societies founded the **Engineering Standards Committee** (later the British Engineering Standards Association) to introduce nationwide standards in a domain that particularly suffered from the lack of compatibility.

1906

The **International Electrotechnical Commission** (IEC) was established by several national organisations such as the British Institution of Electrical Engineers and the American Institute of Electrical Engineers.

At the end of the 19th Century, and the very **beginning of Globalisation**, the need for standards became international.

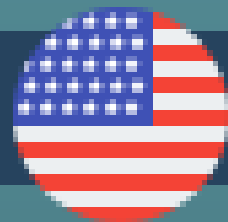


First National Standardization Institutions



1917

Deutsches Institut für Normung (DIN)



1918

American Engineering Standards Committee (AESC)



1921

Japanese Engineering Standards Committee (JESC)



International Organization for Standardization

1947



The International Organization for Standardization (ISO) officially began operations on 23 February 1947.

ISO was created in response to a need for international standards that could support the economic recovery after World War II and facilitate industrial growth worldwide.

It is an independent, [non-governmental](#), [international standard](#) development organization composed of representatives from the national [standards organizations](#) of member countries.



161 members

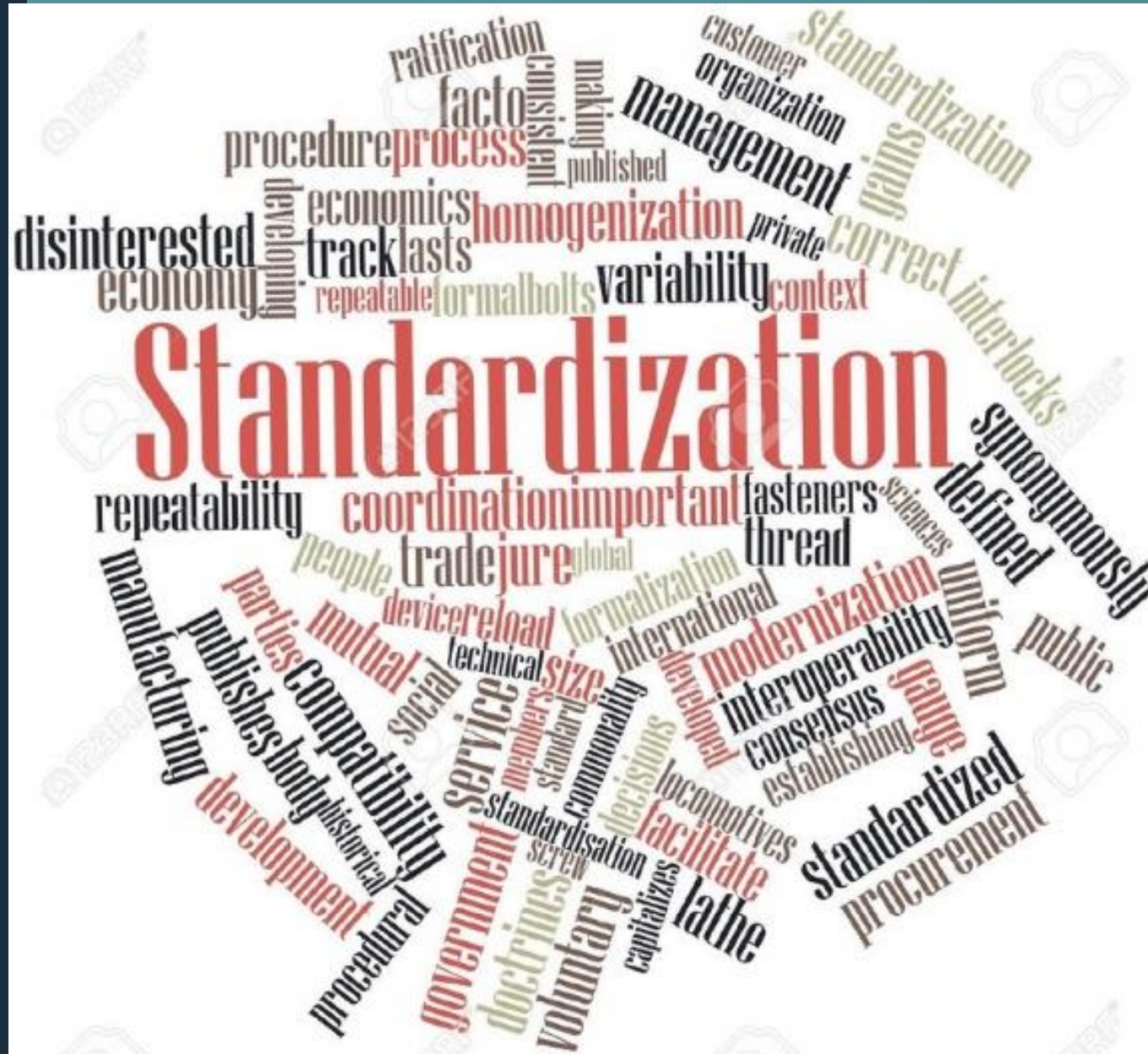
21 100
International Standards

100
new standards each month

More than
100 000 experts

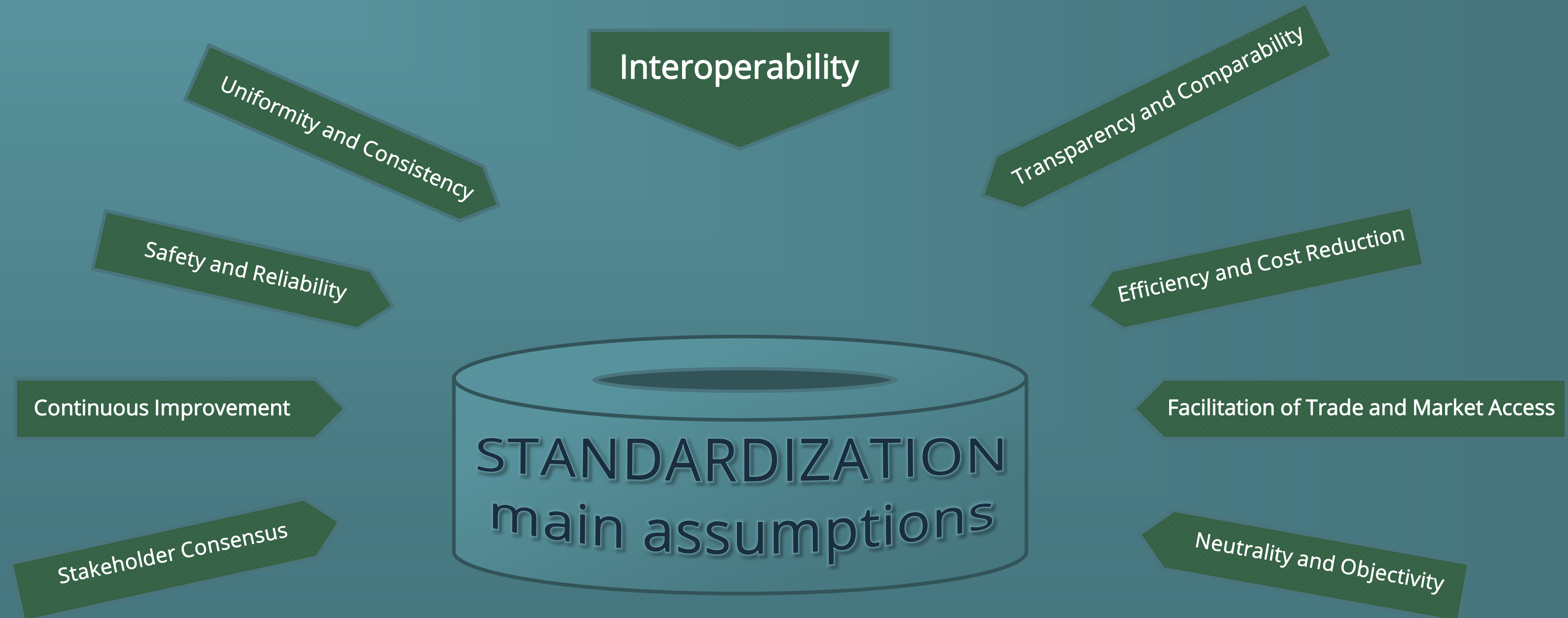
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technical committees

Standardization – definition



Standardization is the process of implementing and developing technical standards based on the consensus of different parties that include firms, users, interest groups, standards organizations and governments.

Standardization – main assumptions



A STANDARD – definition

a standard

a document established by **consensus** and **approved by a recognized body**, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.

officially recognized definition

[ISO/IEC]



STANDARDS CLASSIFICATION – MODE OF ACCEPTANCE



STANDARDS CLASSIFICATION - REQUIREMENTS



Dimension systems – e.g. paper formats, threads

Performance – e.g. breaking strength, energy performance, safety, ergonomics, noise

Methods/Testing – e.g. test schemes, chemical analysis, documentation of performance

Management Systems – e.g. quality, risk, energy or environmental management

Symbols – e.g. pictograms, symbols for machines

Terminology – e.g. definitions of main terms within different fields

Products – e.g. toys, electrical equipment

STANDARDS CLASSIFICATION – SCOPE OF APPLICATION



international

ISO, ITU, IEC

regional

CEN, CENELEC, ETSI

national

PKN, DIN, AFNOR

industry

drafted by industry groups

company

for application in companies and factories

STANDARD-DEVELOPING ORGANIZATIONS

INTERNATIONAL

International Organization for Standardization (ISO)
International Telecommunication Union (ITU)
International Electrotechnical Commission (IEC)

REGIONAL

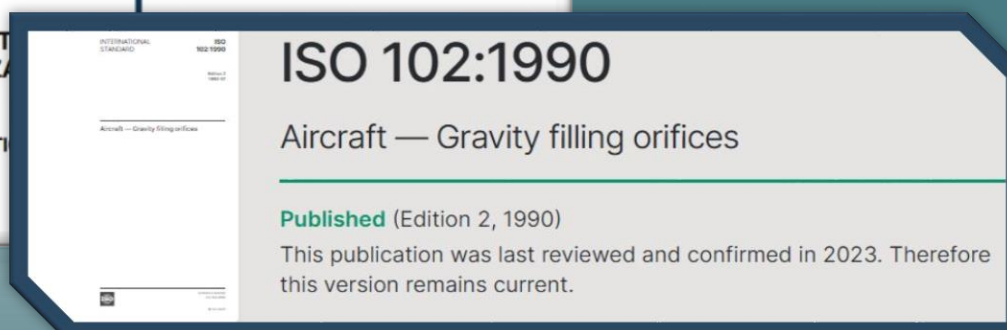
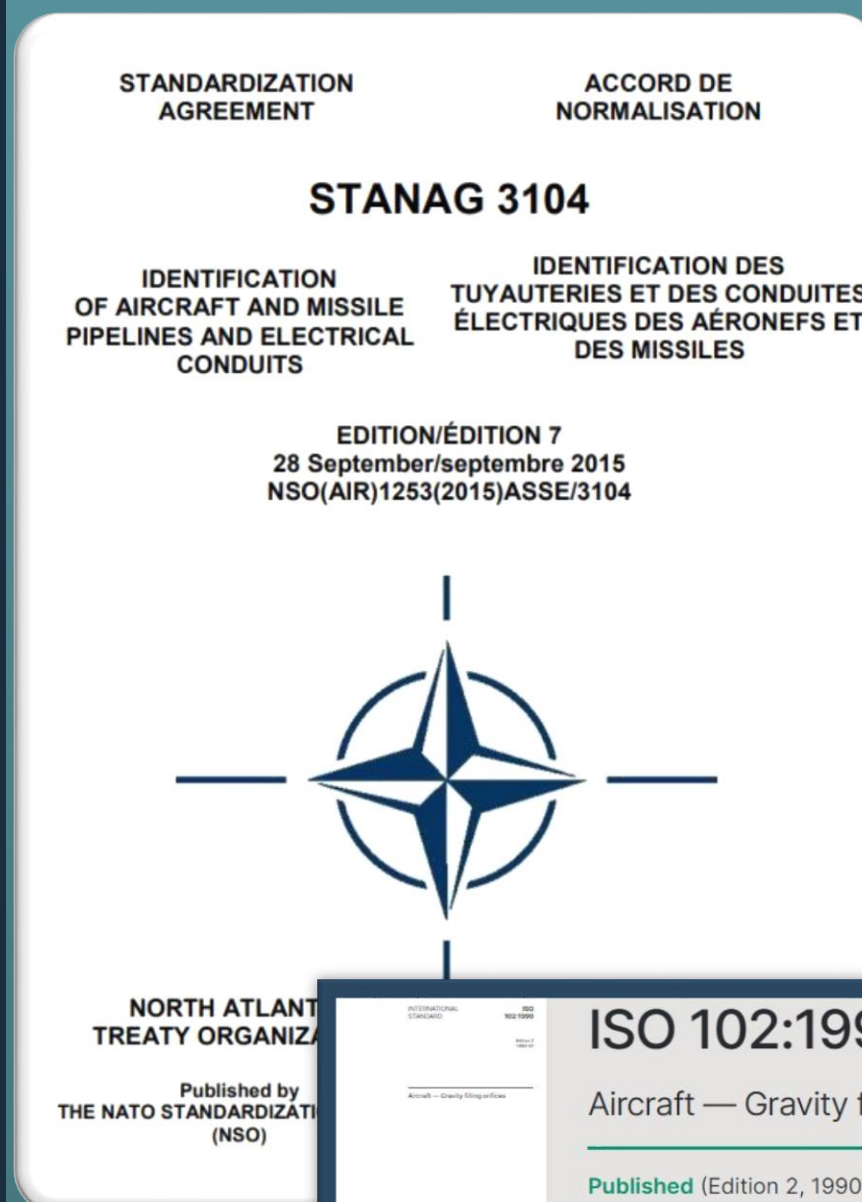
European Committee for Standardization (CEN)
European Committee for Electrotechnical Standardization (CENELEC)
Pan American Standards Commission (COPANT)

NATIONAL

American National Standards Institute (ANSI)
Association Française de Normalisation (AFNOR)
Japanese Industrial Standards Committee (JISC)

Examples of STANDARDS

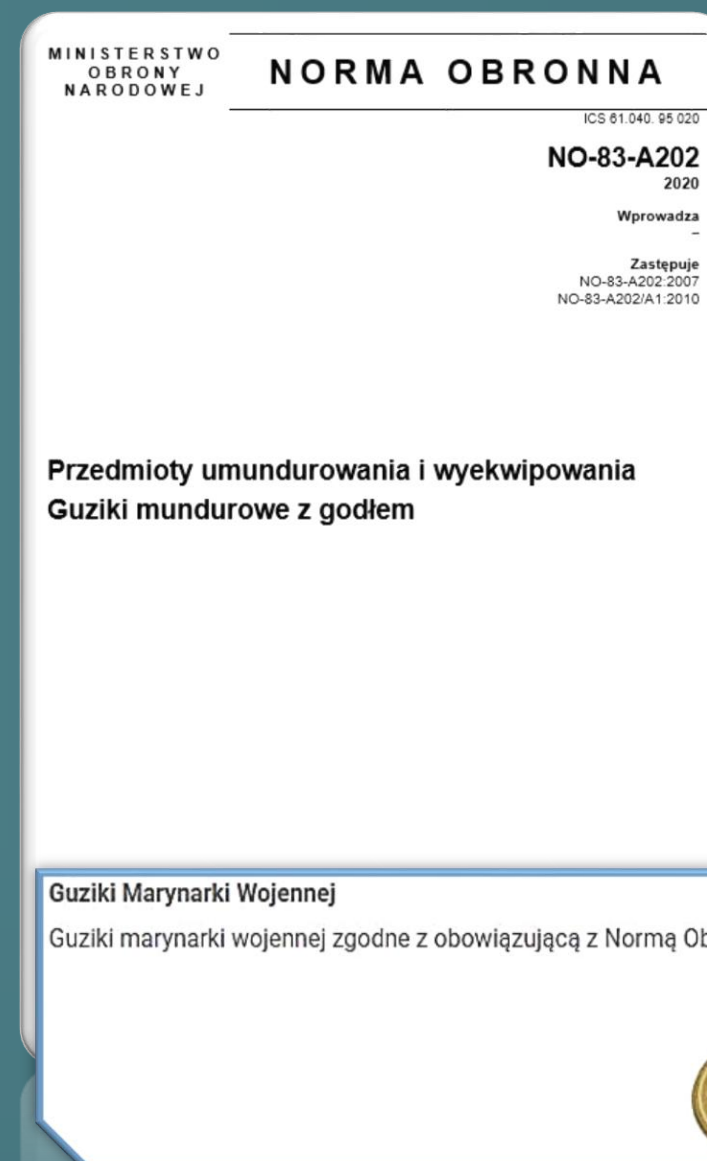
INTERNATIONAL



REGIONAL



NATIONAL



Benefits of standardization

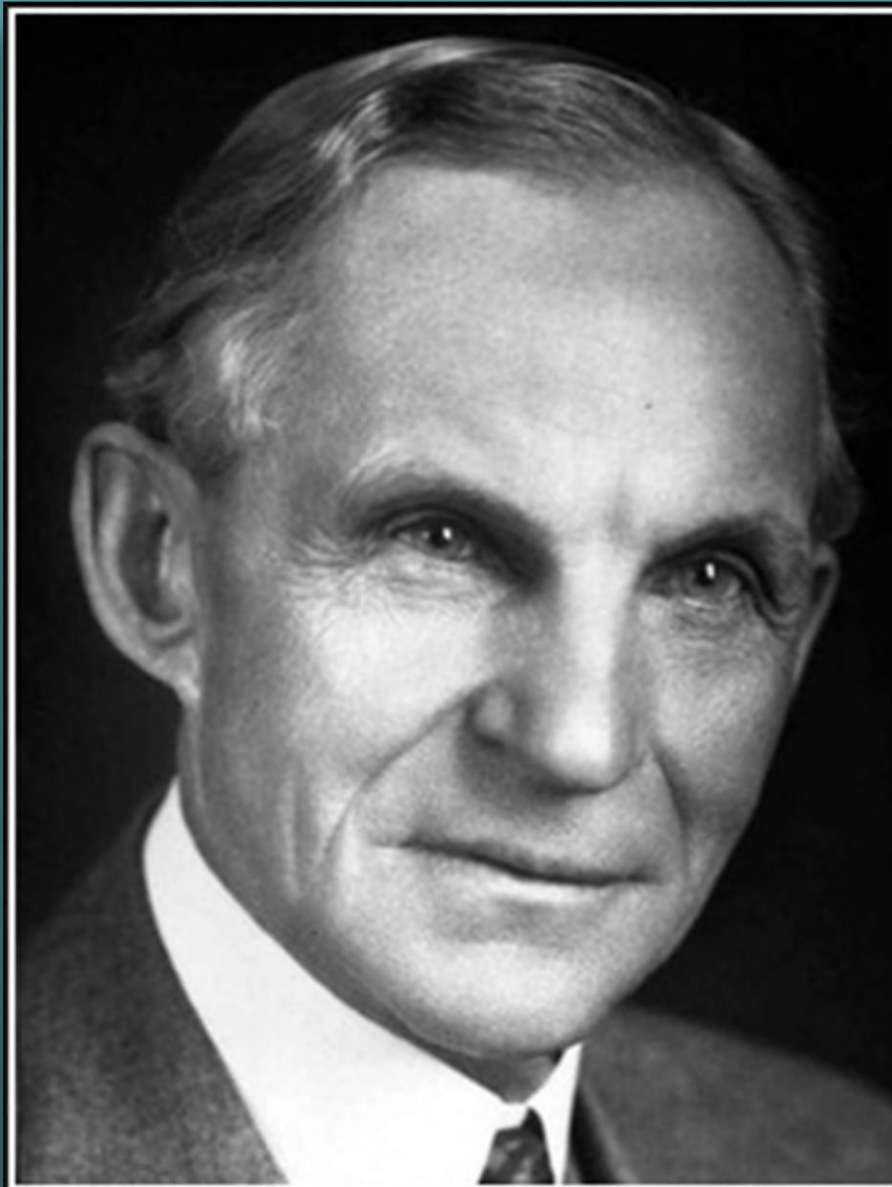


Common concerns about standardization



Concerns Process

- Limitation of innovation and creativity
- High implementation costs and barriers for small firms
- Rigidity and lack of flexibility
- Risks of monopoly and power imbalances
- Excessive documentation and bureaucracy
- International adaptation challenges



If you think of standardization as the best that you know today, but which is to be improved tomorrow; you get somewhere.

— Henry Ford —

Thank you for your attention