

IAEA-CN290-091

International Standardization of Basic Industrial Radiotracer and Radiation Applications

Current State

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2nd International Conference on
Applications of Radiation
Science and Technology

#ICARST2022

A decorative graphic consisting of several thin, wavy lines in various colors (purple, green, blue, yellow, black) that flow from the right side of the page towards the left, creating a sense of movement and connectivity.

22 – 26 August 2022

IAEA Headquarters
Vienna, Austria

Standardization of radiometric methods – why?

Radiometric methods like

- Gamma Column Scanning
- Residence Time Distribution Measurement
- Flow Rate Measurement
- Density Gauging
- Leak Testing
- Sediment Transport Determination
- ...

are more or less well known and well developed methods.

Standardization of radiometric methods – why?

Nevertheless, a standardization, esp. an **international** standardization, is necessary and has the following advantages:

- Increasing the acceptance of these methods by the end users all over the world
- Avoiding of errors at the application of these methods and the interpretation of the acquired data
- Demonstrating guidelines for uniform, safe and secure application of these methods
- Presentation of case studies for better understanding and submitting of instructions for use in informative annexes

Furthermore, the obligation to have such measurements carried out only by **qualified and certified personnel** ensures serious measurements and correct results for the end user.

How is an ISO standard produced? (1)

International harmonized stage codes

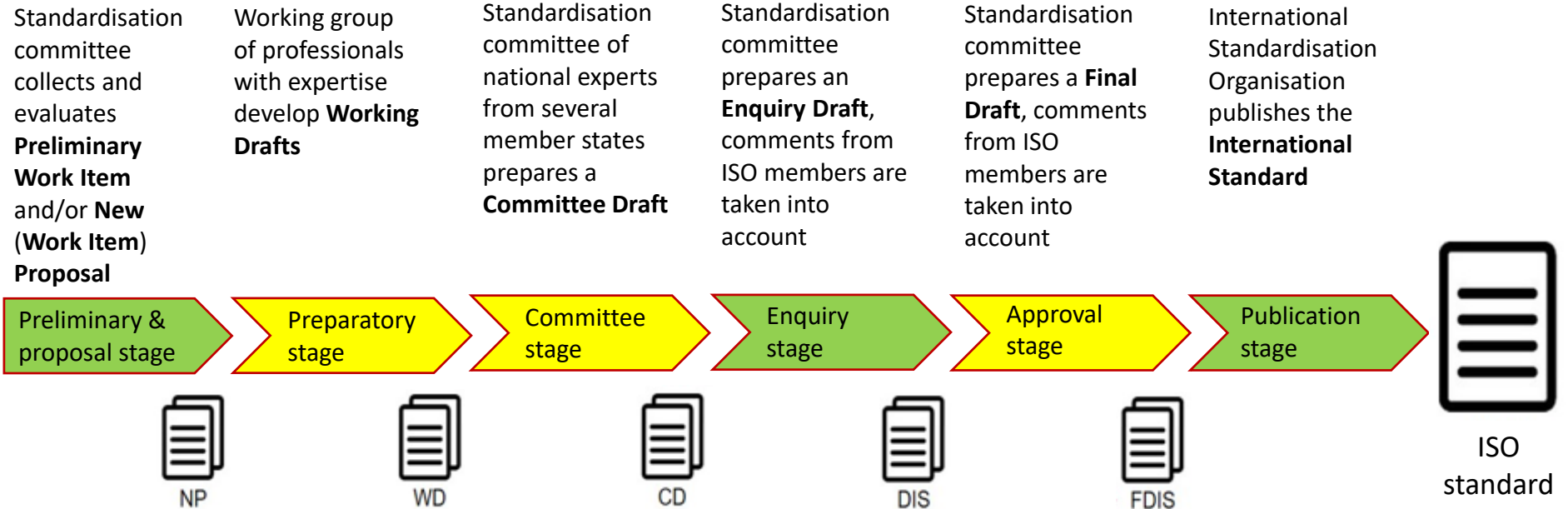
STAGE	SUBSTAGE						
				90 Decision			
	00 Registration	20 Start of main action	60 Completion of main action	92 Repeat an earlier phase	93 Repeat current phase	98 Abandon	99 Proceed
00 Preliminary stage	00.00 Proposal for new project received	00.20 Proposal for new project under review	00.60 Close of review			00.98 Proposal for new project abandoned	00.99 Approval to ballot proposal for new project
10 Proposal stage	10.00 Proposal for new project registered	10.20 New project ballot initiated	10.60 Close of voting	10.92 Proposal returned to submitter for further definition		10.98 New project rejected	10.99 Approval to New project approved
20 Preparatory stage	20.00 New project registered in TC/SC work programme	20.20 Working draft (WD) study initiated	20.60 Close of comment period			20.98 Project deleted	20.99 WD approved for registration as CD
30 Committee stage	30.00 Committee draft (CD) registered	30.20 CD study/ballot initiated	30.60 Close of voting/comment period	30.92 CD referred back to Working Group		30.98 Project deleted	30.99 CD approved for registration as DIS

How is an ISO standard produced? (2)

40 Enquiry stage	40.00 DIS registered	40.20 DIS ballot initiated: 12 weeks	40.60 Close of voting	40.92 Full report circulated: DIS referred back to TC or SC	40.93 Full report circulated: decision for new DIS ballot	40.98 Project deleted	40.99 Full report circulated: DIS approved for registration as FDIS
50 Approval stage	50.00 Final text received or FDIS registered for formal approval	50.20 Proof sent to secretariat or FDIS ballot initiated: 8 weeks	50.60 Close of voting. Proof returned by secretariat	50.92 FDIS or proof referred back to TC or SC		50.98 Project deleted	50.99 FDIS or proof approved for publication
60 Publication stage	60.00 International Standard under publication		60.60 International Standard published				
90 Review stage		90.20 International Standard under periodical review	90.60 Close of review	90.92 International Standard to be revised	90.93 International Standard confirmed		90.99 Withdrawal of International Standard proposed by TC or SC
95 Withdrawal stage		95.20 Withdrawal ballot initiated	95.60 Close of voting	95.92 Decision not to withdraw International Standard			95.99 Withdrawal of International Standard

Source: <https://www.staska.at/normenwissen-kompakt-wie-entsteht-eine-norm/>

How is an ISO standard produced? (3)



Stage code	Stage	Associated document name (abbreviation)
00	Preliminary	Preliminary Work Item (PWI)
10	Proposal	New Work Item Proposal (NP or NWIP)
20	Preparatory	Working Draft (WD)
30	Committee	Committee Draft (CD)
40	Enquiry	Enquiry Draft (DIS)
50	Approval	Final Draft (FDIS)
60	Publication	International Standard (ISO)

obligatory

optional

Source: Vonach, M. (2019). Entwicklungspotentiale der Norm Iso 9001. Wünsche und Erwartungen an die inhaltliche Weiterentwicklung (Masterarbeit). Donau-Universität Krems

Subjects of ISO standards for industrial applications using radiometric methods

Title of the standard	Number and „name“ of the ISO committee + WG	Stage	(Prelim.) ISO number	(Prelim.) Date of publication
Non-destructive testing – Gamma ray scanning method on process columns	ISO/TC 135/SC 5 „Radiographic testing“ WG „Gamma Scanning“	ISO (60.60)	23159	2020-06
Measurement of Fluid Flow Rate in Closed Conduits – Radioactive Tracer Methods	ISO/TC 030/SC 5 „Velocity and mass methods“ WG 7: „Tracer methods“	DIS (40.20)	24460	2022-10
Density Measurement of water-sediment mixture in water bodies using radiometric methods	ISO/TC 113/SC 6 „Sediment transport“ WG 5: „Radioactive Methods“	CD (30.00)	6640	2024-06
Non-destructive testing – Leak testing – Radioactive tracer methods for pressured vessels and underground pipelines	ISO/TC 135/SC 6 „Leak testing“ WG 1: „Leak testing in pressured vessels and underground pipelines using radioactive tracer methods“	WD (20.20)	6366	2024-09

Not everything is standardized - And it doesn't have to be

Standards and standardisation ensure that one thing fits the other and that life works.



Standards are developed as qualified recommendations by experts only when they are needed.



A standard is reviewed every 5 years at least.



If standards are no longer needed, they are withdrawn.



P.S.: the radius of curvature of cucumbers was laid down in an European regulation (1677/88/EEC) that has since been withdrawn and was never a standard.

Source: ASI – Austrian Standards International

Thank you

The authors thank the IAEA for their support of the international standardization activities.

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