

# STRENGTHENING IEC, ISO AND ITU COLLABORATION FOR SMART CITIES

## Working Methods (**ISO** and **IEC**)

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**Gennaro Ruggiero**, IEC Systems Technical Officer



ISO has **165** members  
1 member per country

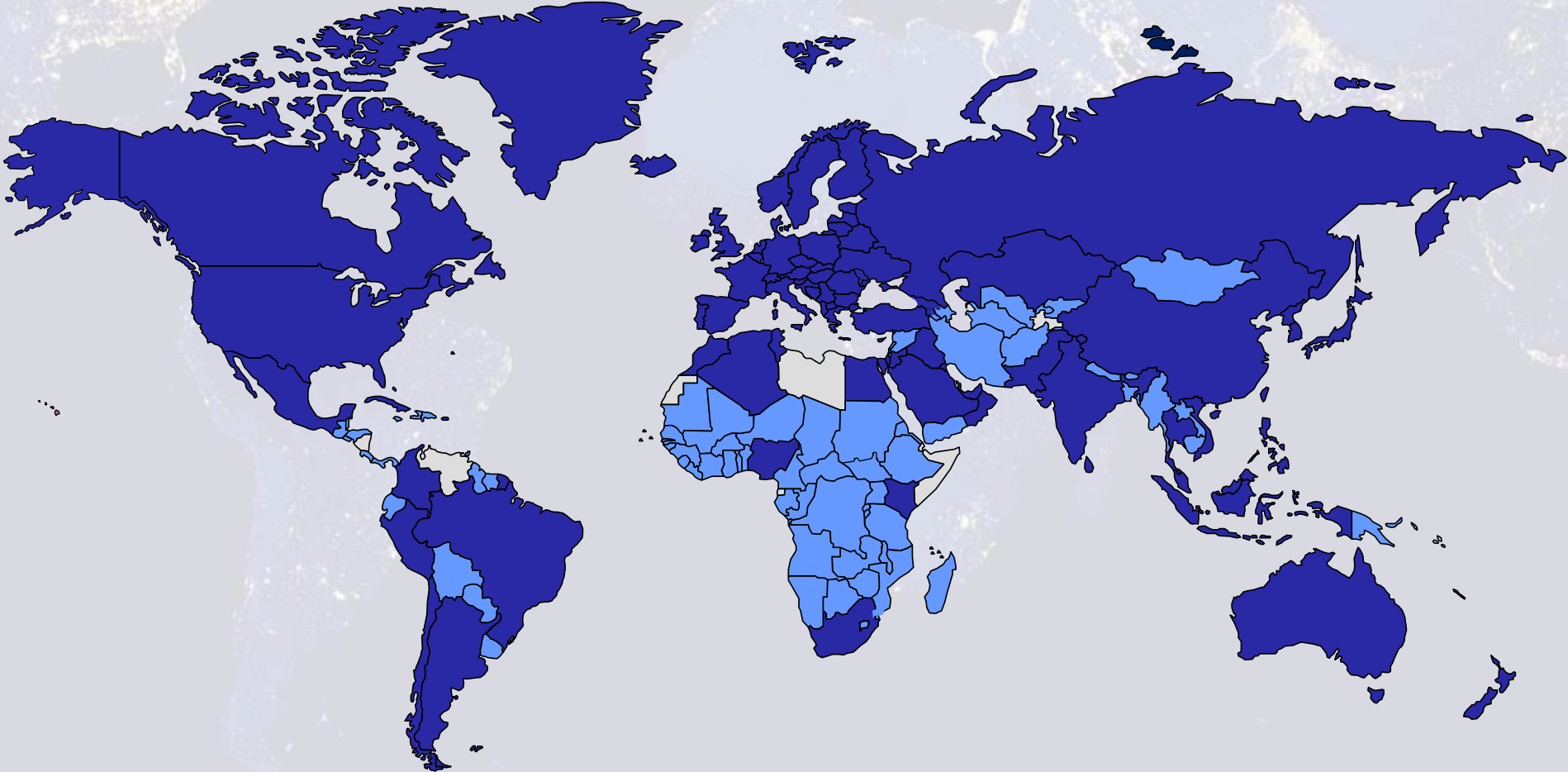
Member bodies Correspondent members Subsidiary members



# IEC Family: 173 countries

86 Members

87 Affiliates



[List of IEC Members](#)

[List of IEC Affiliates](#)



# Committees and their structure

TC Technical Committee

SC Sub-Committee

SyC Systems Committee (only in IEC)



(Technical) work is done in **technical committees**

**254** technical committees in ISO

**211** technical/sub-/systems committees in IEC

Each committee has a defined **scope**

**JTC 1** is a **joint ISO/IEC committee** dealing with **Information Technology**



# Rules and procedures for technical work

- **ISO/IEC Directives, Part 1**
- **ISO Supplement**
- **IEC Supplement** (it includes Annex SP “Systems standardization”)

*Approved by Management Boards*

- **JTC 1 Supplement + Standing Documents**

*Approved by JTC 1 and Management Boards*

# Leadership in committees

## TC, SC and SyC

- **Chair**
- **ISO: Committee Manager (CM) – IEC: Secretary**
- **Secretariat** assigned to an ISO/IEC member

## WG

- **WG convenor**
- **WG secretary** (optional), supported by an ISO/IEC member
- **Project leader** (PL, Project editor in [JTC 1](#))

# Participation to technical work

Every ISO or IEC member declares its interest in every TC/SC/SyC:

- **P-member:**  
active participation
- **O-member:**  
receiving information
- **Non-member:**  
allowed to vote at DIS, FDIS and SR only





# Participation to technical work: **JTC 1** specific

In some countries:  
ISO member is not the same as  
IEC member:

In **JTC 1** and its SCs:  
1 member per country, either ISO  
or IEC member



# Committee membership

**P-members**

**O-members**

**Internal liaison**

**External liaison**

# P-members and O-members

P-members	O-members
Active role	Observing
Voting obligation	No voting rights on committee internal ballots, may comment
Provide experts for the technical work	-
Send delegations to meetings	Send delegations to meetings
Submit new work item proposals	-

# Liaisons in committees

External liaison	Internal liaison
International or interregional organizations	ISO and IEC committees
Win/win participation	
No voting rights	No voting rights
Participation (A category) or information (B category, only intergovernmental)	
At committee level (A and B) or at WG level (C)	In WGs, participation only for the part of the draft that is interesting for the appointing committee
Submit new work item proposals (A)	Submit new work item proposals

# Liaison in committees:

## JTC 1 specific category A liaison with ITU-T

**Liaison mode:** work carried out in one organization with other one participating as liaison. Publication by one organization.

**Collaboration mode:** a common text is developed in cooperation and published separately by both organizations

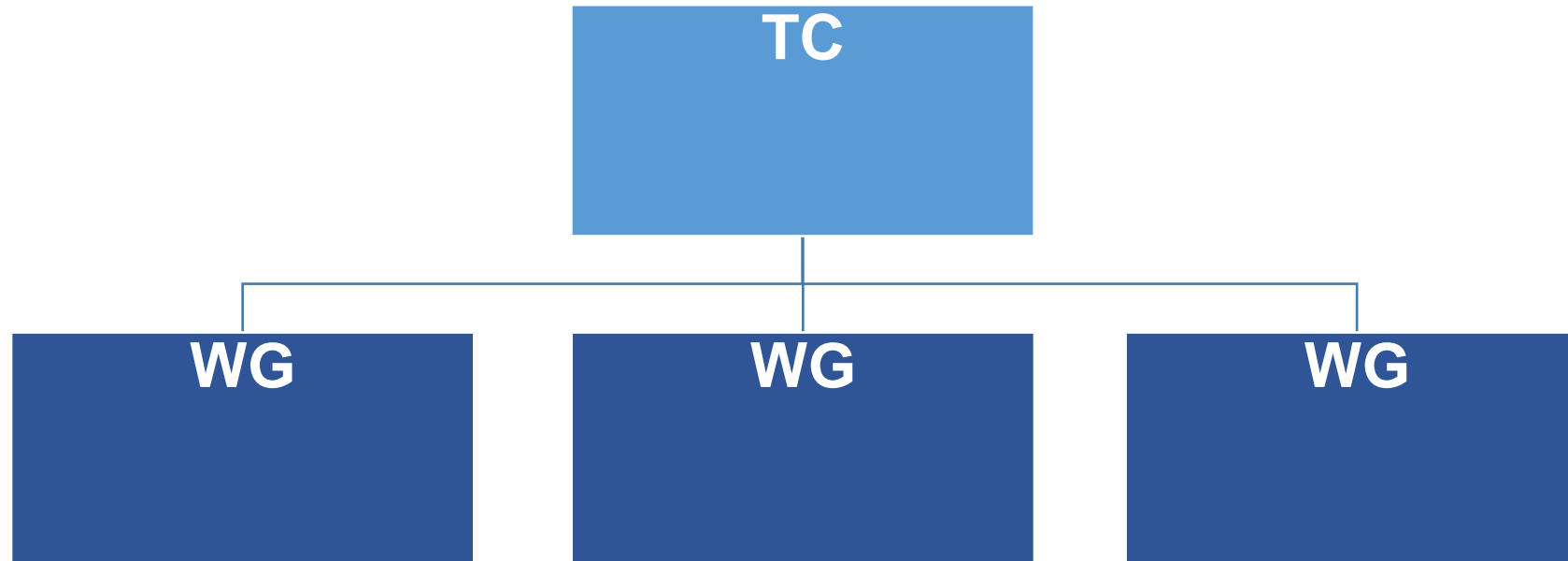




# Committee membership in IEC SyC

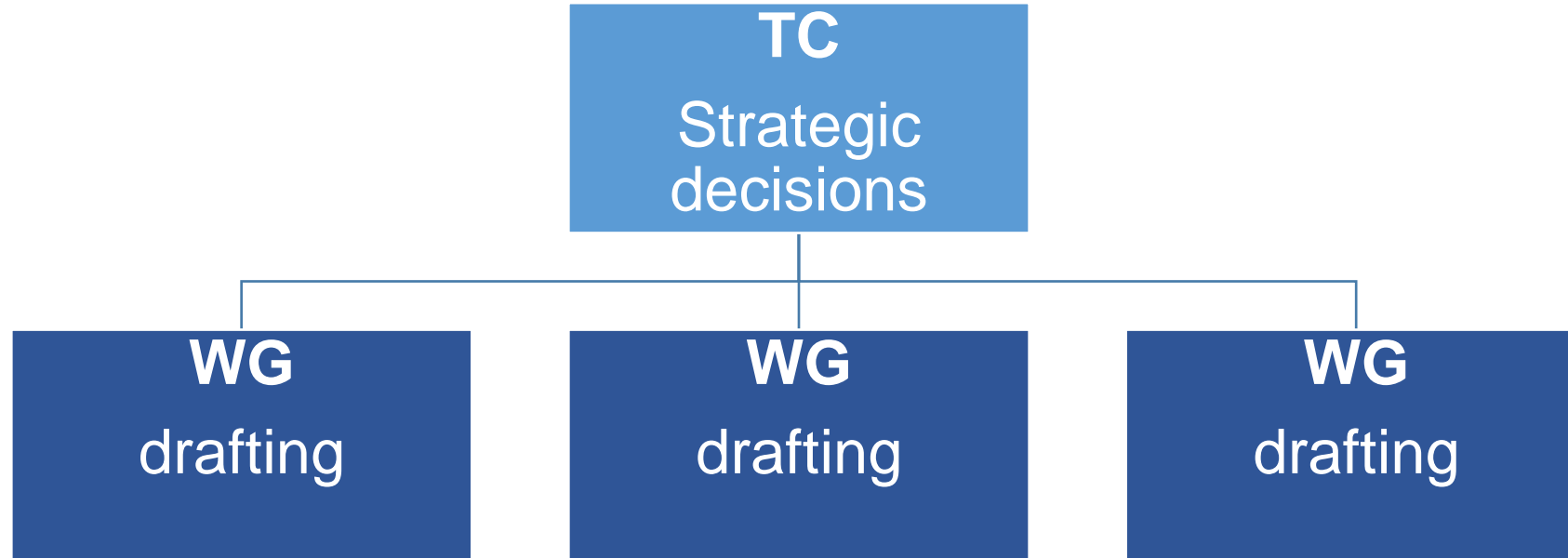
<b>P-members</b>	<b>O-members</b>
<b>Internal liaison</b>	<b>External liaison</b>
<b>R-membership</b>	<b>Open Forum</b>

# TC (and SyC) typical structure



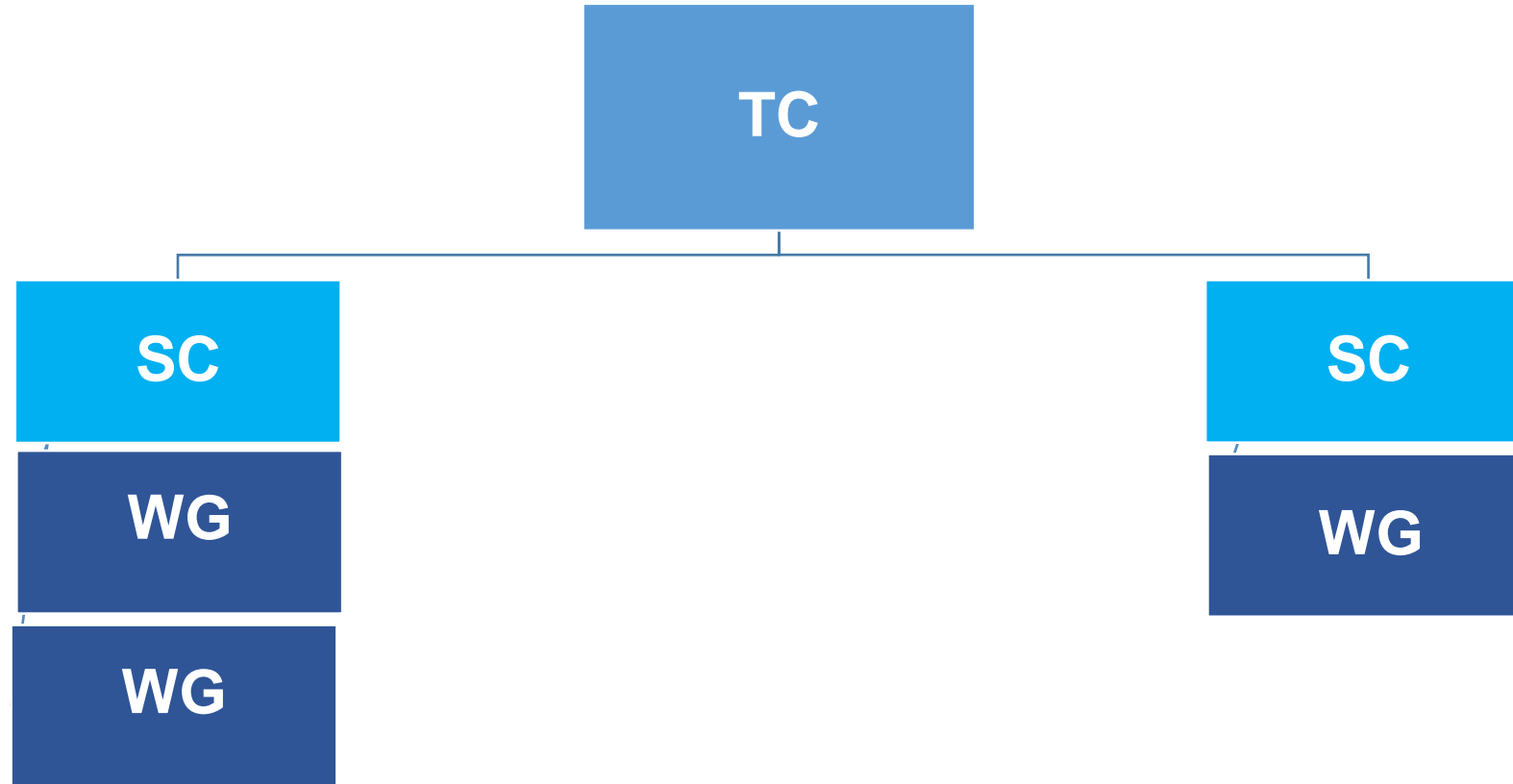
**TC:** technical committee | **WG:** working group

# TC typical structure



**TC:** technical committee | **WG:** working group

# TC typical structure (2)



**TC:** technical committee | **SC:** Sub committee | **WG:** working group

# Joint working group (JWG): establishment and administrative responsibility

JWG may be established to undertake a specific task in which more than one ISO and/or IEC technical committee or subcommittee is interested.

Mutual agreement between the committees on:

- the committee/organization having the administrative responsibility for the project;
- the convenor of the joint working group (option to appoint a co-convenor)
- the membership of the joint working group

Committee/organization with administrative responsibility for the project shall:

- record the project in their programme of work;
- be responsible for addressing comments
- prepare drafts for the committee, enquiry and approval stages;
- be responsible for maintenance of the publication.



# Other groups under the TC/SC/SyC

- **Advisory group**
- **Chair advisory group**
- **Ad hoc group**

**Not drafting** standards

# TC structure: **JTC 1** specific

The **ISO** or **IEC SC** is **independent from the parent TC** apart from the Strategic Business Plan (at TC level), scope (the SC scope is covered by the TC scope), SC chair appointment and escalation of appeals.

In **JTC 1**, some SC decisions have to be confirmed by the parent TC (e.g. some cases of NP ballot, modification of the SC work programme, application for C category liaison)

# ISO/IEC procedures for liaison and work allocation

By the ISO/IEC Agreement of 1976, **ISO and IEC together form a system for international standardization as a whole.**

The allocation of work between ISO and IEC is based on the agreed principle that

- all questions relating to international standardization in the electrical and electronic engineering fields are reserved to IEC,
- the other fields being reserved to ISO
- allocation of responsibility for matters of international standardization where the relative contribution of electrical and nonelectrical technologies is not immediately evident, will be settled by mutual agreement between the organizations.

# Formal liaison at committee level

Most coordination needs arising between individual ISO and IEC committees are successfully dealt with through formal technical liaison arrangements.

The requesting organization shall specify the **mode of cooperation**

**Mode 1 – Informative relation**

**Mode 2 – Contributive relation**

**Mode 3 – Subcontracting relation**

**Mode 4 – Collaborative relation**

**Mode 5 – Integrated liaison**



# Mode 5 – Integrated liaison

Joint Working Groups and Joint Technical Committees ensure integrated meetings for handling together the development of standards under a principle of total equality of participation and to avoid duplication of work.

Standards developed under the Mode 5 – Integrated liaison via a joint working group between ISO and IEC are published by the organization of the committee having administrative responsibility. The standard carries the logo of both organisations.

# Development process: stages

To build consensus on a working document

# To build consensus on a working document

"consensus: General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments.

NOTE Consensus need not imply unanimity."

## **ISO/IEC Guide 2** **Standardization and related activities — General** **vocabulary**



PWI



NWIP



WD



CD



DIS/CDV



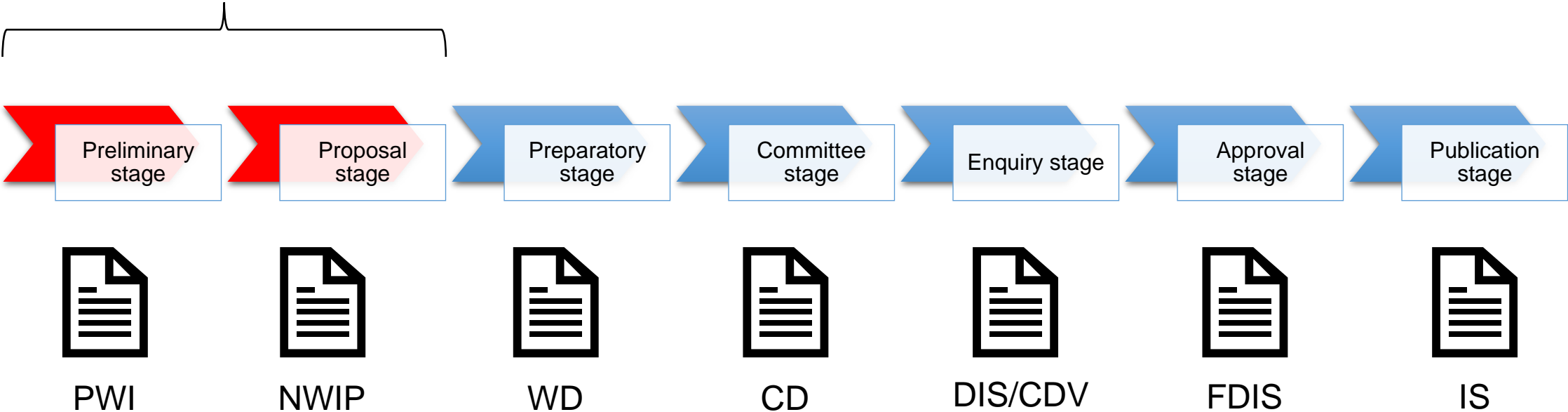
FDIS



IS

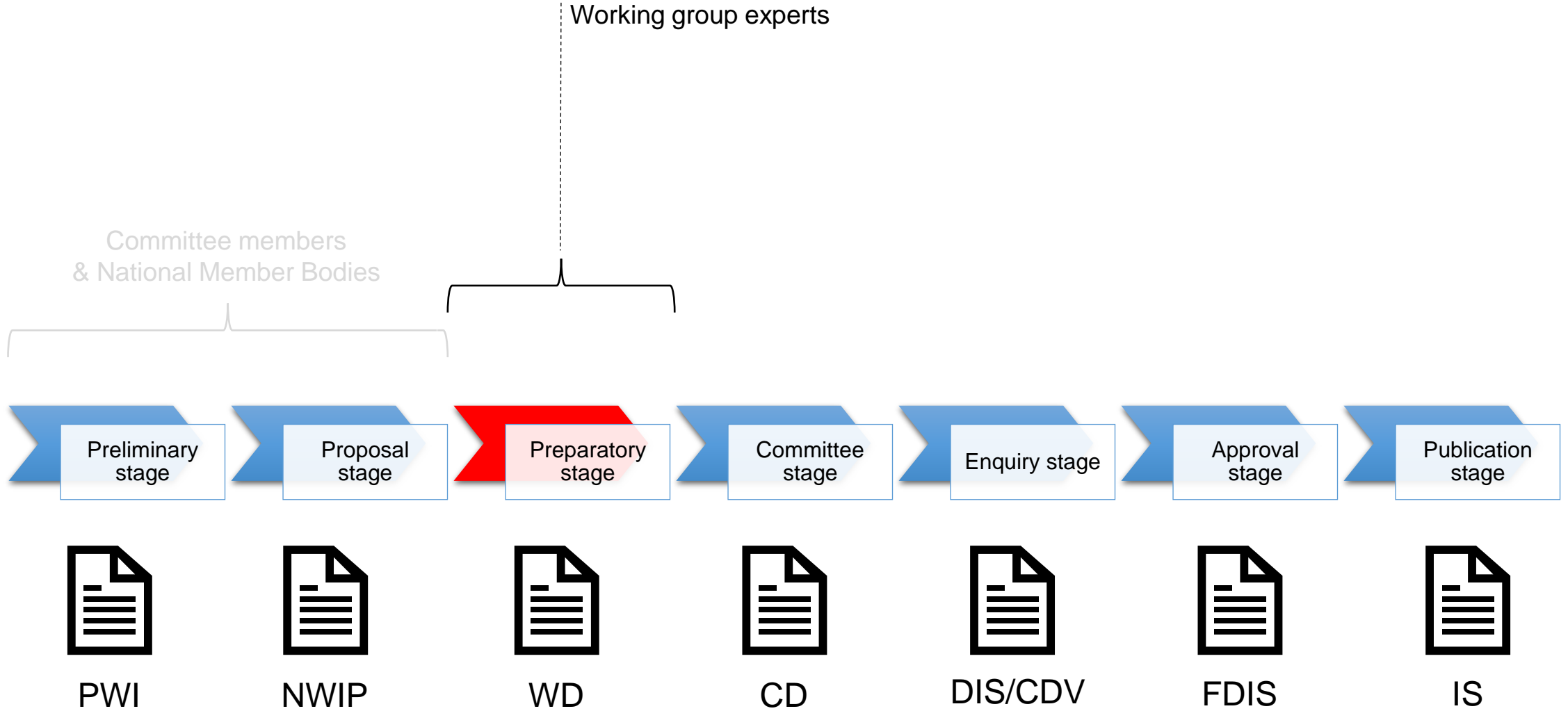


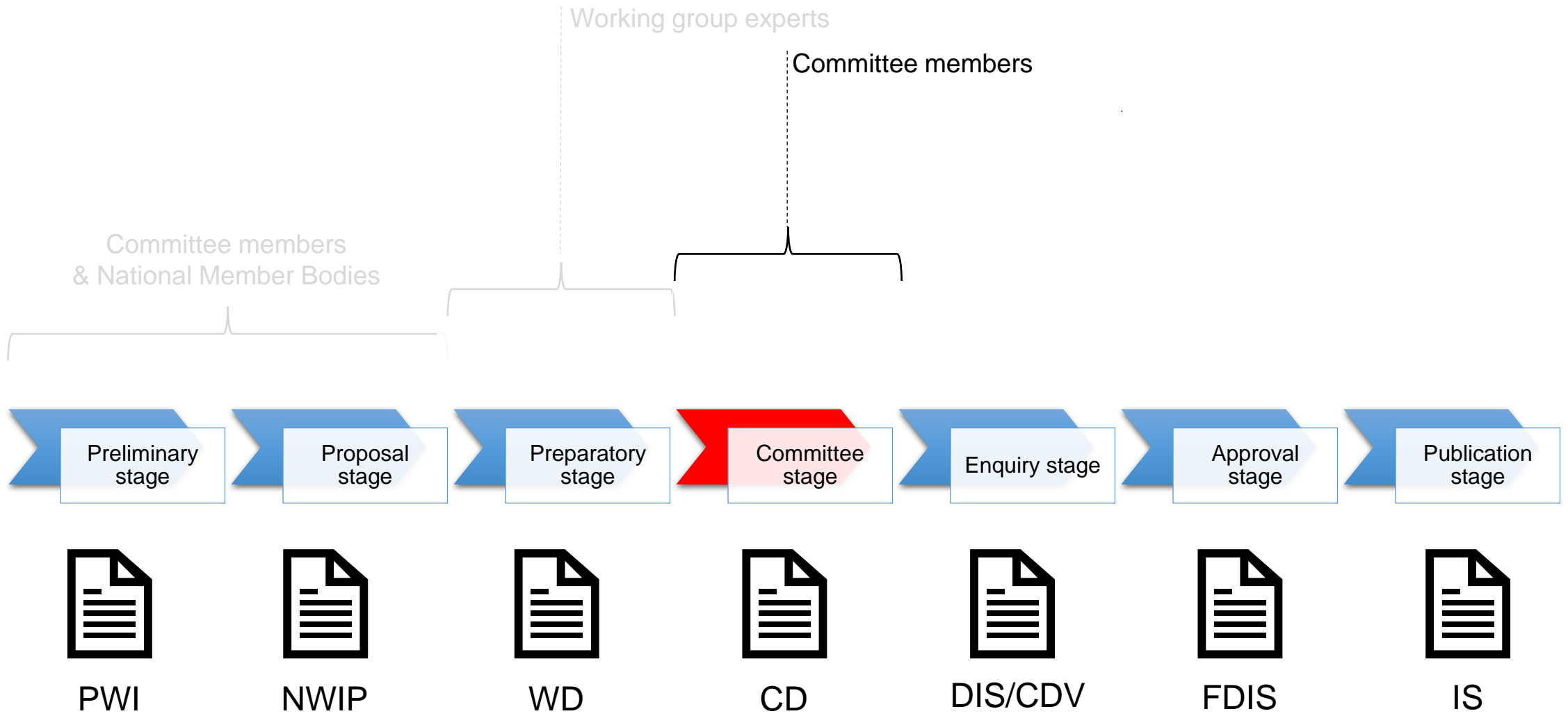
Committee members  
& national bodies

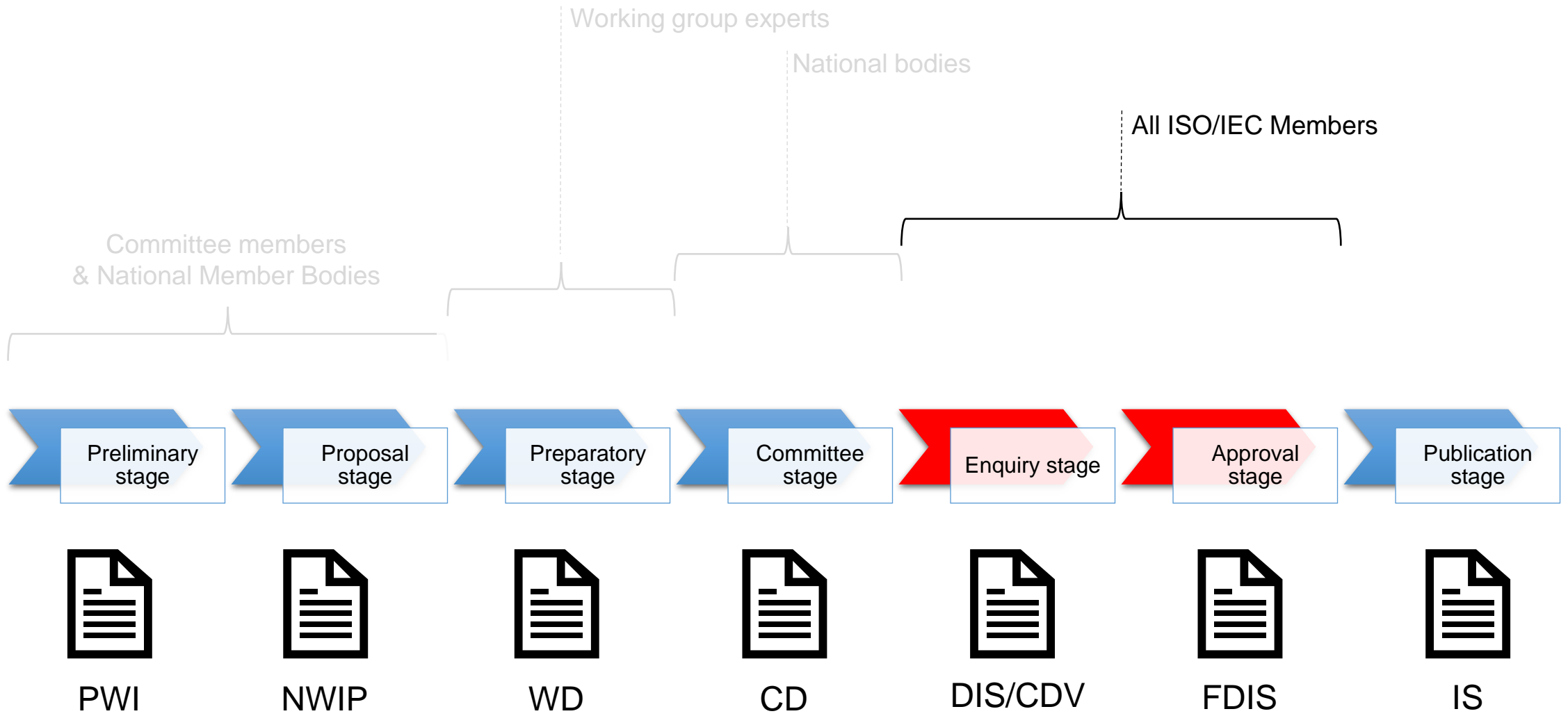


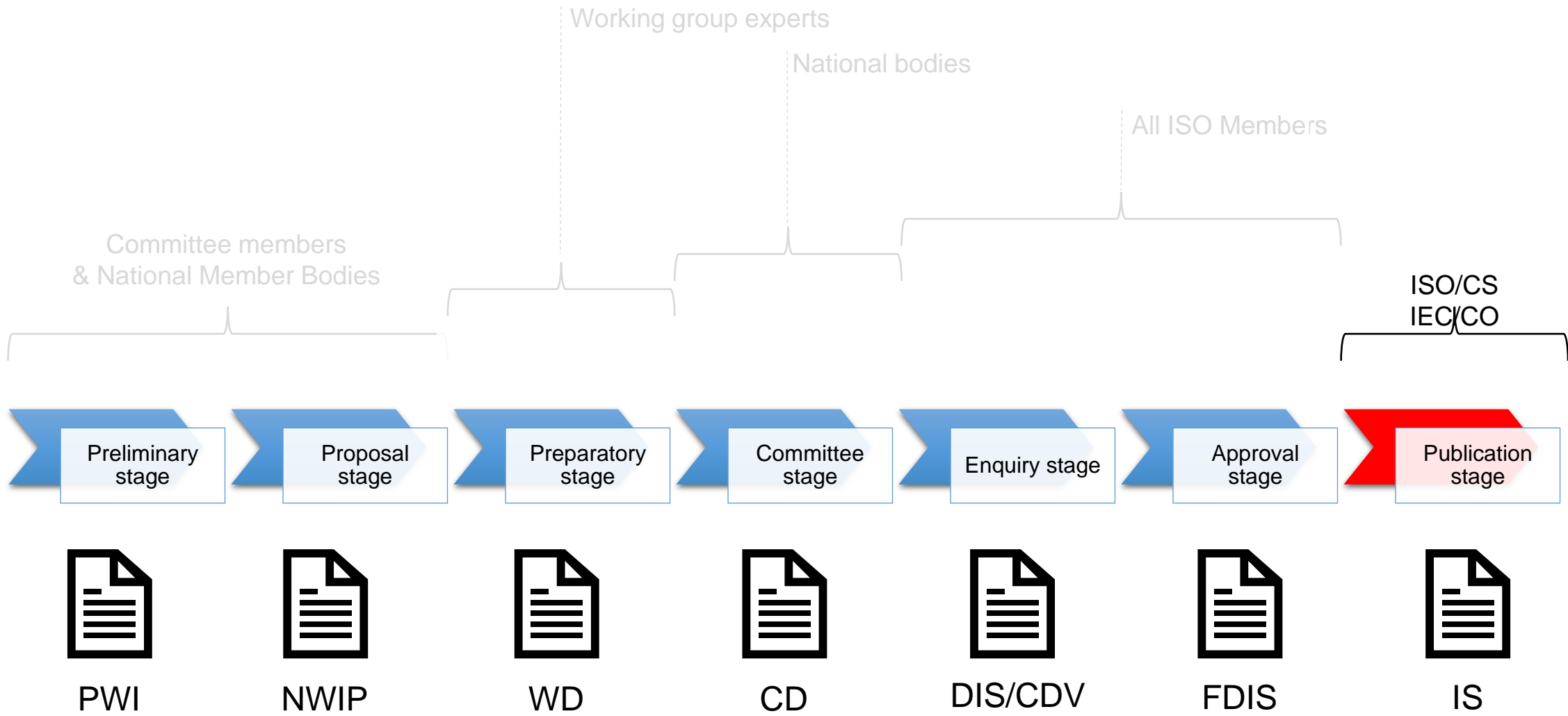
Working group experts

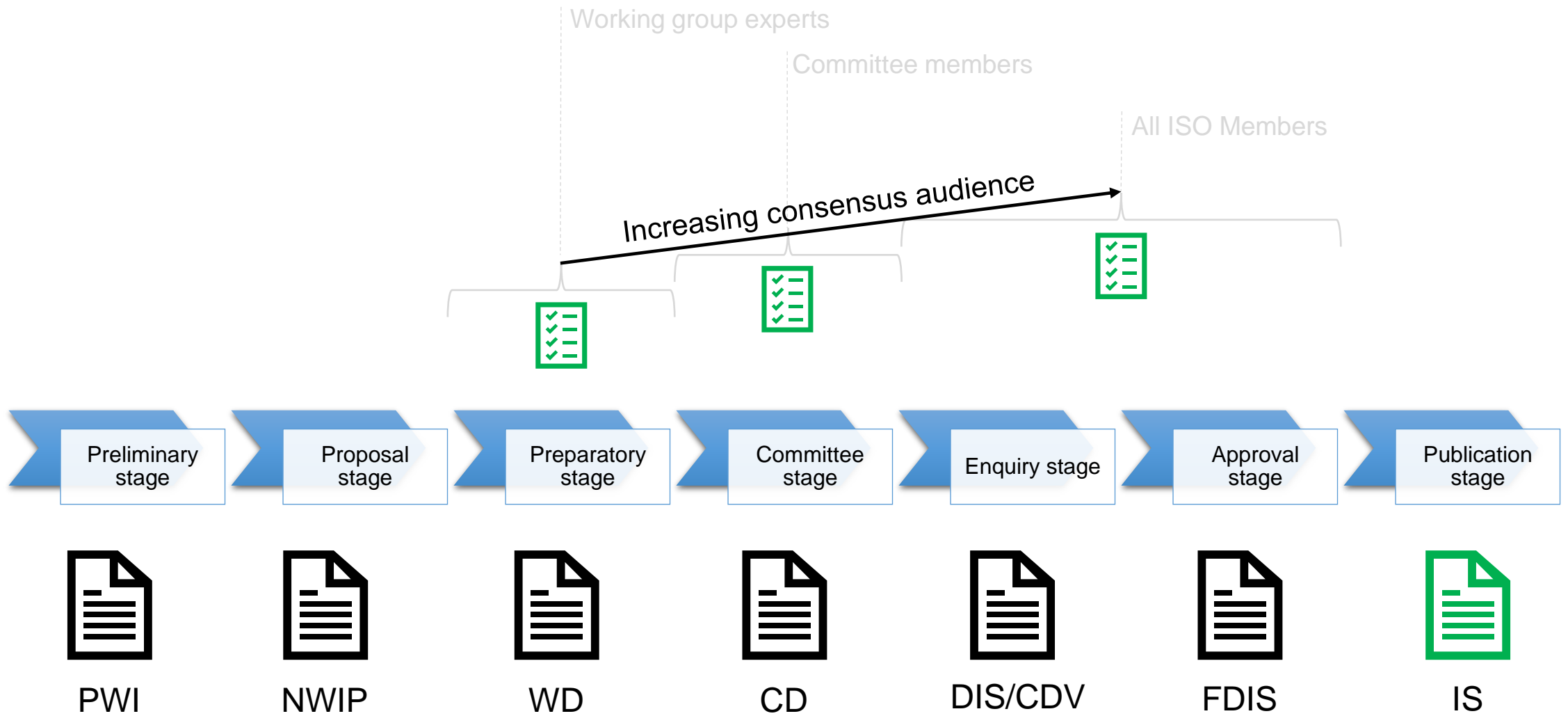
Committee members  
& National Member Bodies

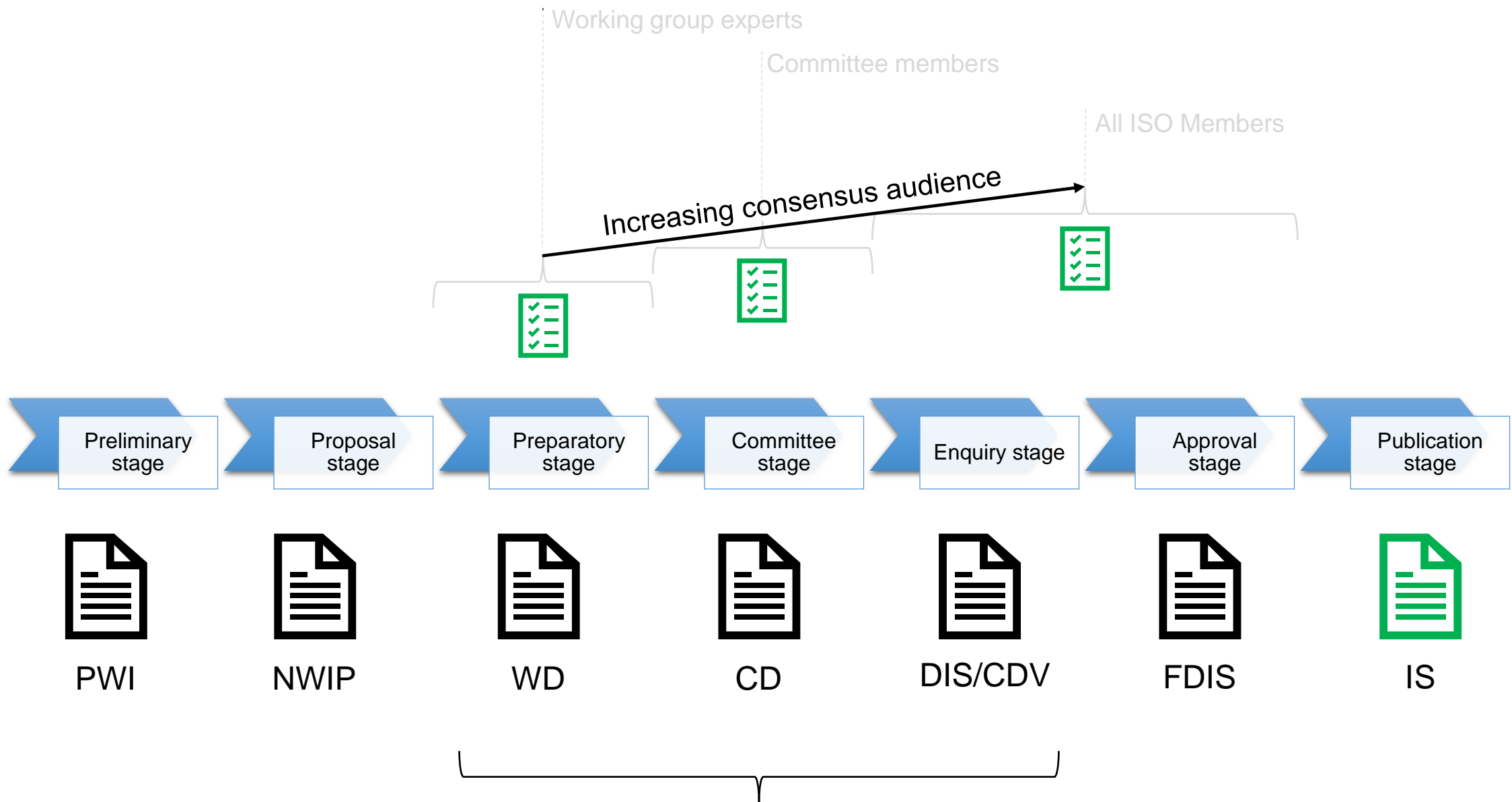






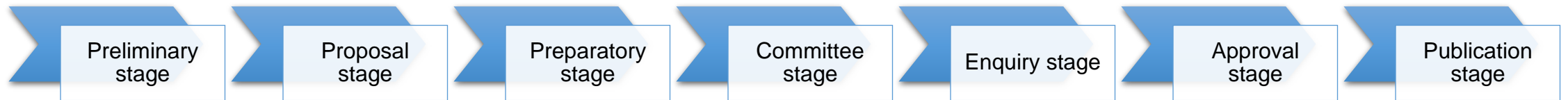








What happens at every stage?



PWI



NWIP



WD



CD



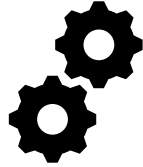
DIS/CDV



FDIS



IS



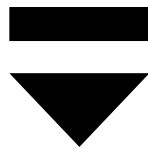
General characteristics



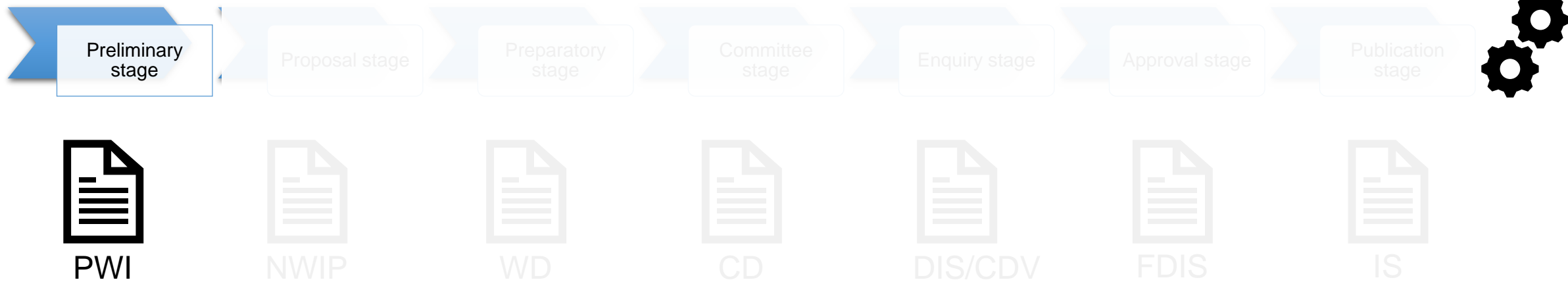
Before the ballot



The ballot



After the ballot



- Preliminary stage is **optional**
- Preliminary stage used to work on proposals
- Ad hoc group created by the technical committee
- No target dates established
- PWIs regularly reviewed for a maximum of 3 years
- PWI can be used as the basis for the NWIP
- No detailed work allowed



PWI



NWIP



WD



CD



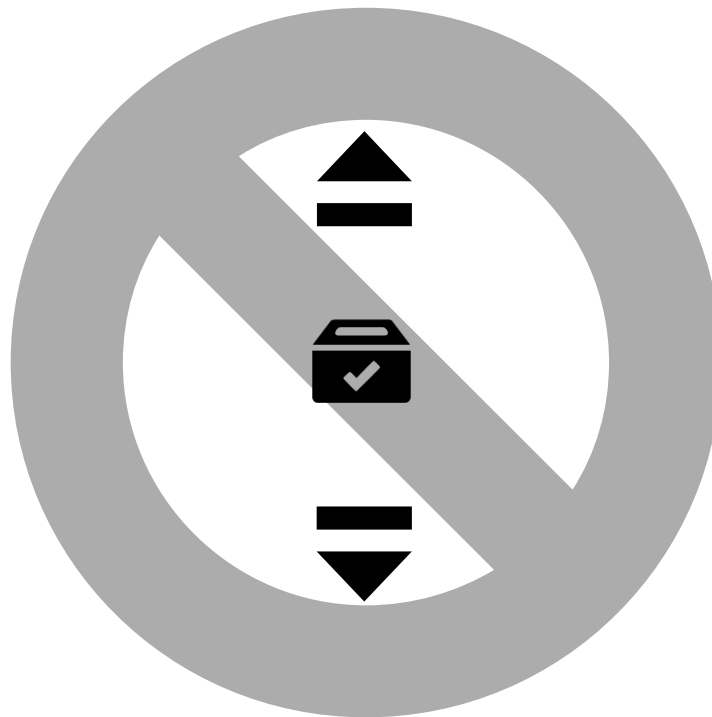
DIS/CDV

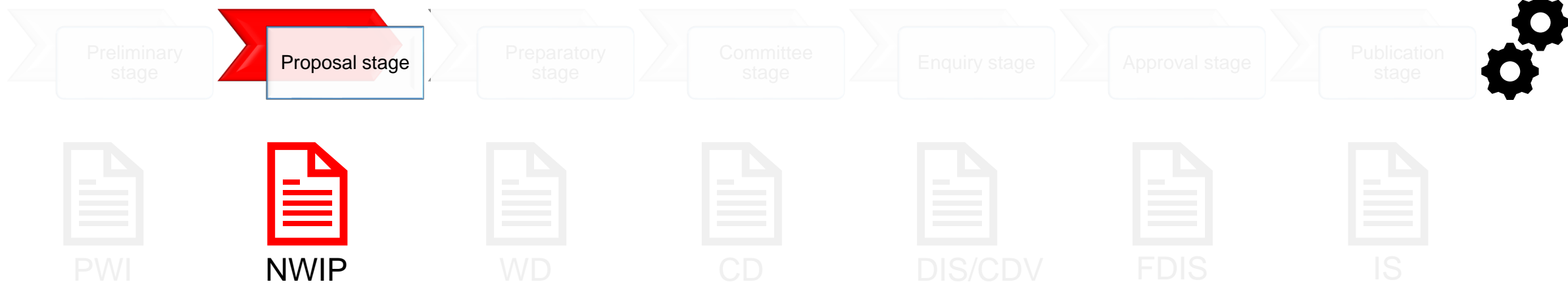


FDIS

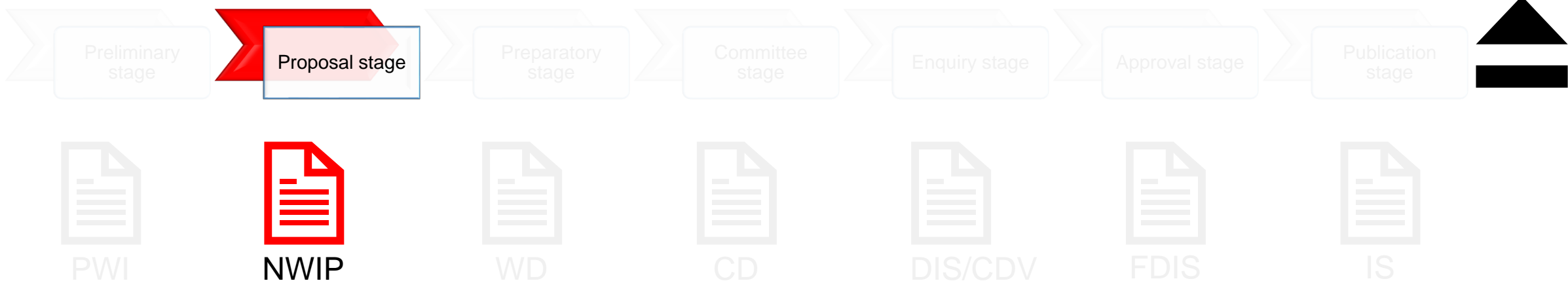


IS

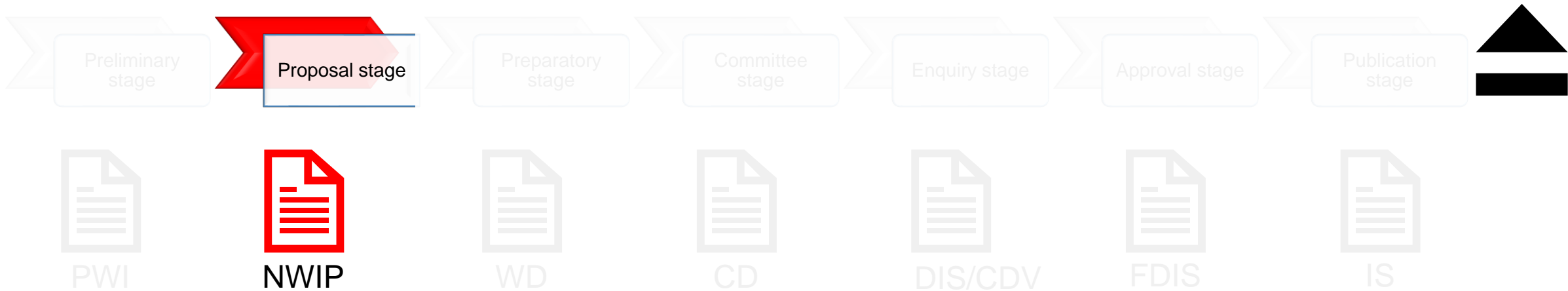




- Proposal stage is **mandatory**
- New Work Item Proposals (NWIP) are proposals for a:
  - new International Standard
  - revision or amendment to an existing standard in which the scope will be expanded
  - new part of an existing International Standard
  - ISO or IEC Publicly Available Specification (PAS)
  - ISO or IEC Technical Specification (TS)

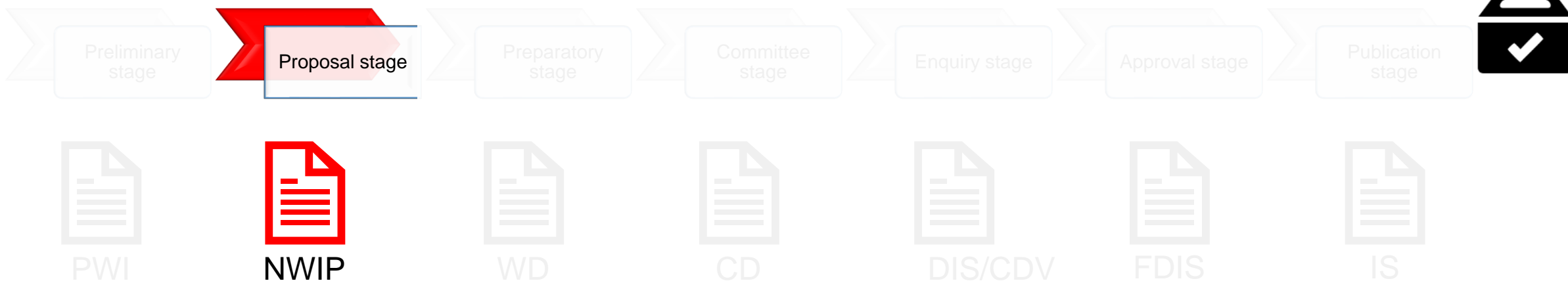


- NWIPs can be introduced by:
  - A National Body
  - The secretariat of a technical committee or subcommittee
  - An organization in a Category A liaison
  - The Technical Management Board/Standardization Management Board
  - The Chief Executive Officer



- The NWIP should include:
  - A first working draft for discussion
  - A project leader
  - A project plan with clear target dates
- The secretariat of the technical committee:
  - May request clarifications on the NWIP
  - Cannot refuse an NWIP
  - Is responsible to complete the Form 4/ Form NP, supported by the proposers
  - Initiates the NWIP ballot

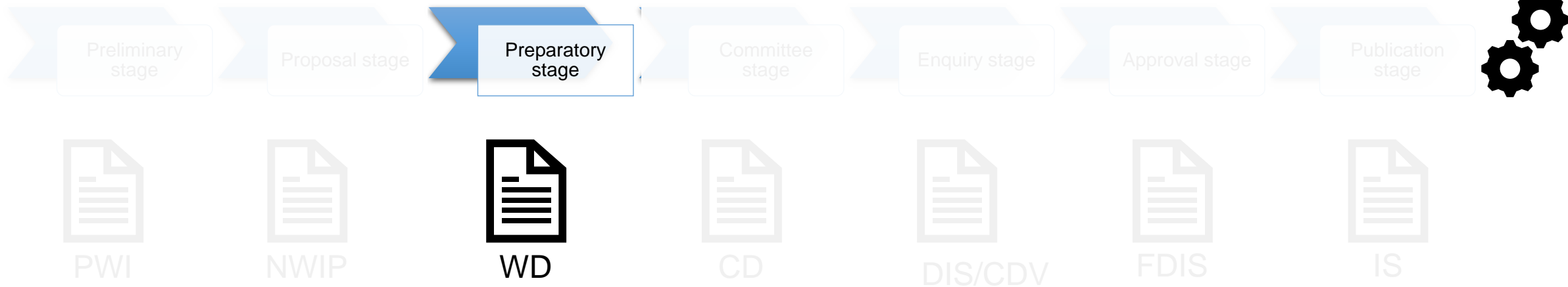




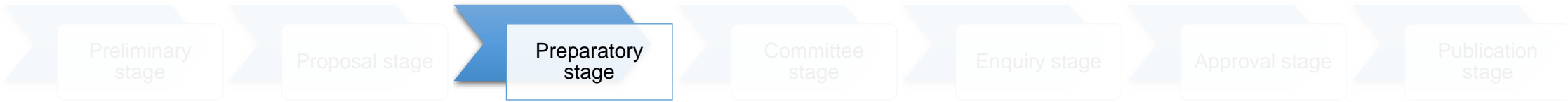
- 12-week committee internal ballot (CIB)
- Approval criteria:
  - 2/3 majority of P-Members voting and
  - at least 5 P-Members commit to participating in the document's development
- Abstentions are not counted
- Negative votes justified



- CM/Secretary to circulate voting results and complete post-voting decision process within one month
- NWIP is registered in the program of work of the committee
- Conclusion of the Proposal stage
- Clock starts ticking 🕒



- Preparatory stage is **optional**
- Working groups are established
- First WG meeting scheduled soon after the approval of the NWIP
- Project managed according to agreed target dates
- Development of the working draft (WD)
  - Input from working group experts
  - Working draft may undergo several revisions before moving forward to next stage of development (committee draft)
- WG consensus approves the document for registration as a committee draft (CD)



PWI



NWIP



WD



CD



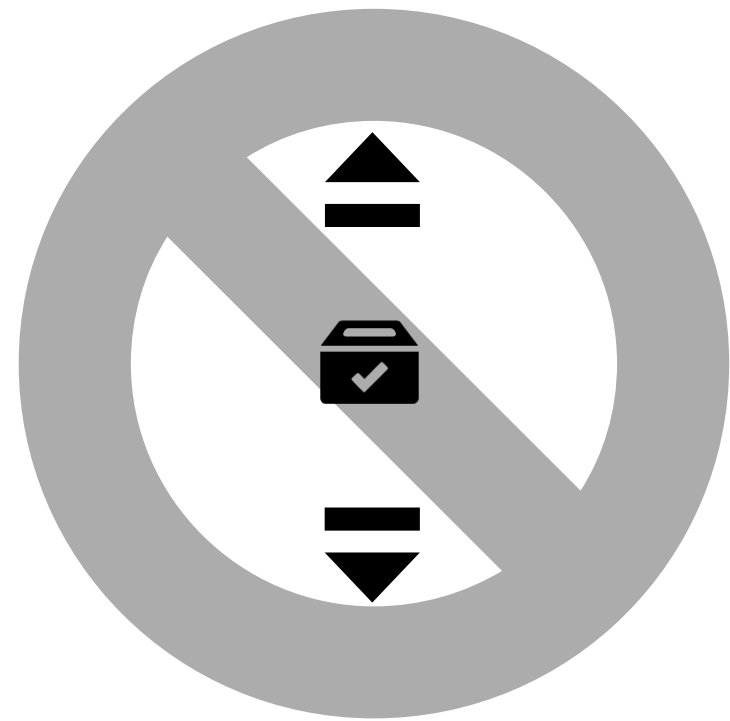
DIS/CDV

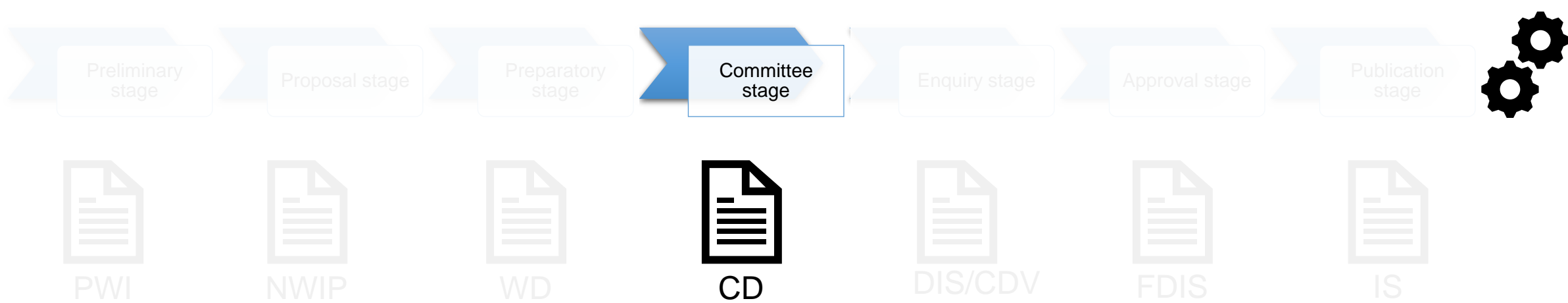


FDIS



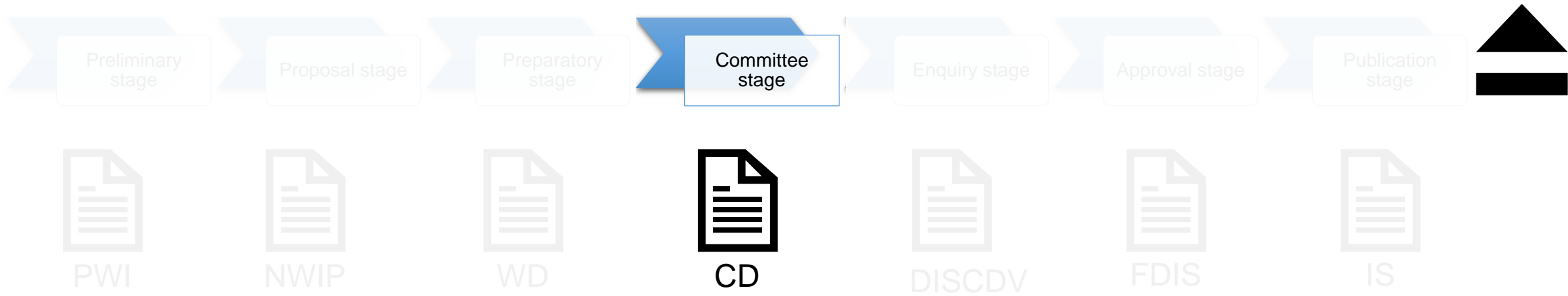
IS



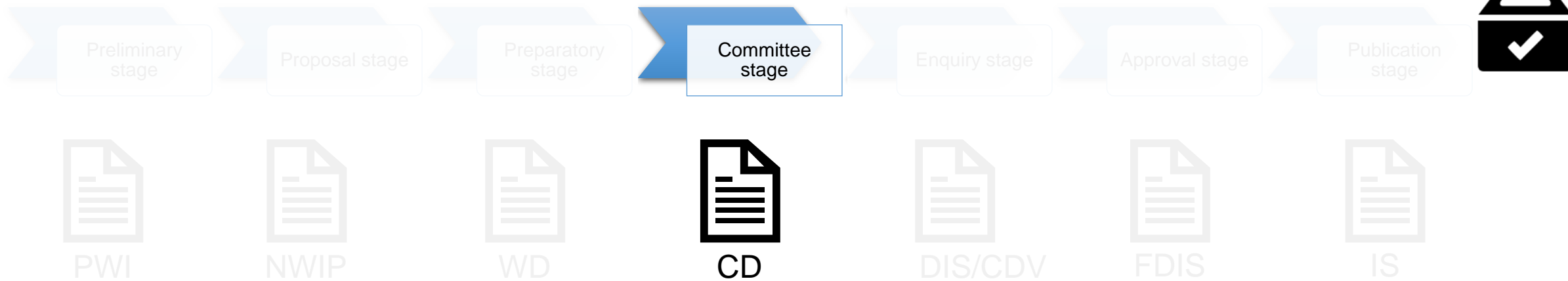


## Committee stage is **optional**:

- Principal stage at which comments from National Bodies that are members of the committee are considered
- Skipping the CD stage can be accepted by the committee



- Working groups submit their working draft (WD) document for registration as committee draft (CD)
- Secretariat of the technical committee to circulate the CD to all P-members and O-members



- 8, 12 or 16 weeks committee draft (CD) ballot
- National bodies to provide technical and editorial comments
- ISO National bodies also indicate if they agree to move to the next stage: DIS registration



- CM to prepare the compilation of comments
- Leadership team determines how to proceed
  - To discuss the CD and comments at the next meeting
  - To circulate a revised CD for consideration
  - To register the CD for enquiry balloting
- Project leader prepares a disposition of comments document and new text
- Committee consensus approves the document for registration as a draft International Standard (DIS or CDV)





Enquiry stage is **mandatory**:

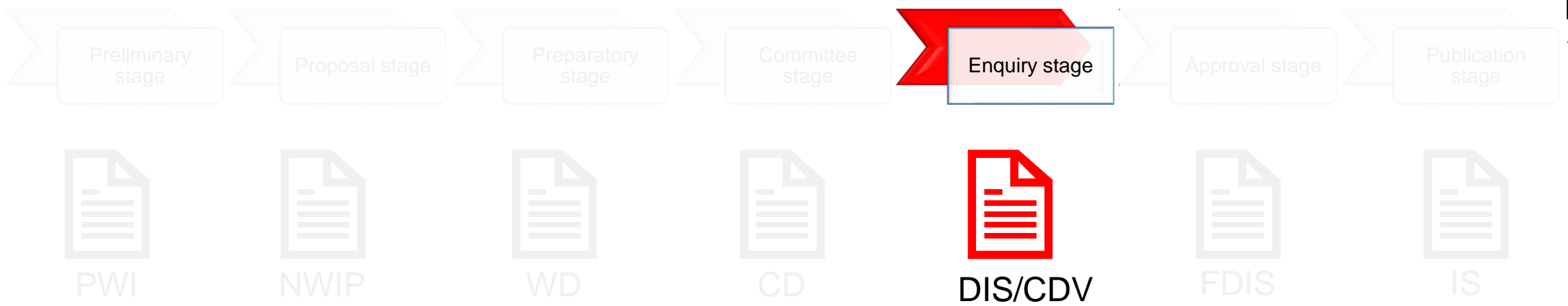
- Principal stage at which all ISO/IEC Members can vote to approve publication and submit comments for consideration
- Last opportunity for **technical comments to be considered on draft document**



- Committees submit their committee draft (CD) for registration as draft International Standard (DIS in ISO, CDV in IEC)
- Secretariat to submit documents for registration by ISO/CS or IEC/CO
- ISO/CS or IEC/CO initiates the DIS or CDV ballot



- 12 week DIS/CDV ballot
  - 8 week translation period before ballot initiation
- Approval criteria
  - Acceptance by 2/3 majority of P-members voting AND
  - Not more than  $\frac{1}{4}$  of total votes cast are negative
- Abstentions are not counted
- Negative votes not accompanied by technical reasons are not counted



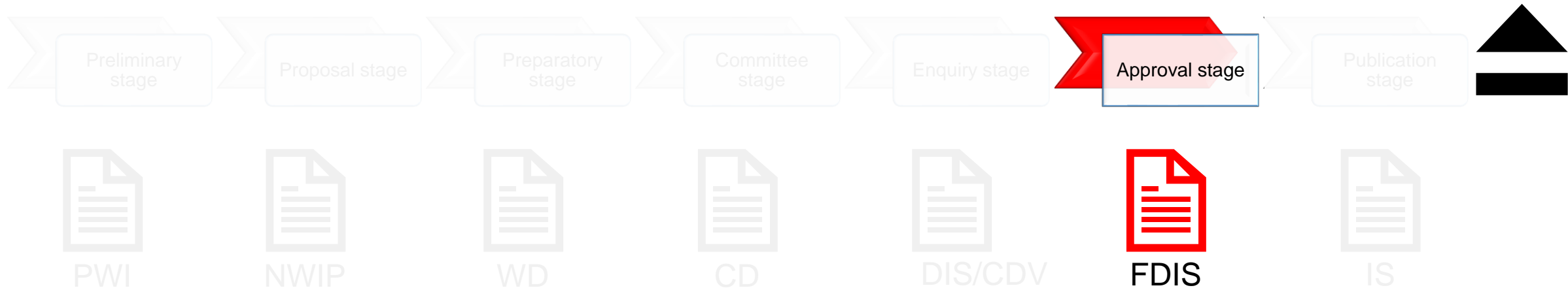
- When the approval criteria are met and no technical changes are to be included, proceed directly to publication
- When the approval criteria are met, but technical changes are to be included, submit it to a further ballot (FDIS)
- If approval criteria are not met,
  - Circulate a revised DIS/CDV for ballot
  - Circulate a revised CD for comment
  - Discuss the DIS ballot and comments at next meeting
  - Change deliverable into TS or PAS
  - Abandon the project



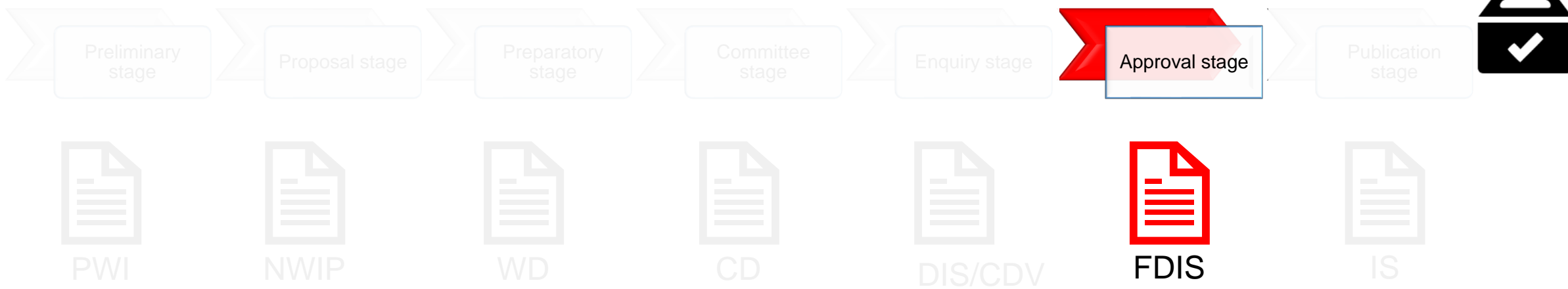
The Enquiry stage ends with the registration of the text for circulation as a final draft International Standard (FDIS) or publication as an International Standard (IS)



- Approval stage is **mandatory**, *unless* the DIS/CDV was approved and no technical change was introduced
- Yes/No vote for publication
- Last stage at which all ISO/IEC Members can vote to approve publication
- Technical comments are not considered but kept for the next revision

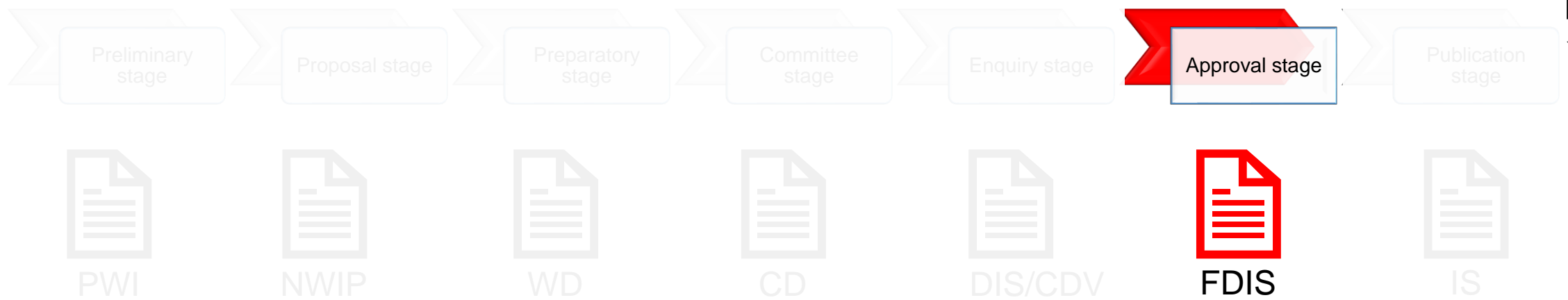


- Committees submit their enquiry draft (DIS/CDV) for registration as final draft International Standard (FDIS)
- Secretariat to submit documents for registration by ISO/CS (or IEC/CO)
- ISO/CS (or IEC/CO) initiates the FDIS ballot



- 8 week FDIS ballot
- Approval criteria
  - Acceptance by 2/3 majority of P-members voting AND
  - Not more than 1/4 of total votes cast are negative
- Abstentions are not counted
- If approved, technical comments submitted will be considered during the next revision of the document





- If approved, the FDIS will proceed to the Publication stage
- If rejected, the document is referred back to the technical committee for reconsideration. The committee's options:
  - Resubmit a modified draft as a CD, DIS/CDV or FDIS
  - Change deliverable into TS or PAS
  - Abandon the project
- The Approval stage ends with the beginning of the Publication stage



- ISO/CS or IEC/CO corrects editorial errors
- Final 2-week proof review
- The Publication stage ends with the publication of the International Standard

# Standards development in JWG

## Proposal:

For ISO/ISO or IEC/IEC JWGs, only one NP ballot is needed.

For ISO/IEC JWGs, two NPs are launched, one in each organization.

## WD:

under the JWG

## CD:

circulation for review and comment by each committee.

## DIS/CDV and FDIS:

For ISO/ISO or IEC/IEC JWGs, only one ballot is needed (in TC with administrative responsibility)

For an ISO/IEC JWG, two votes are launched, one in each organization.

# ISO-IEC deliverables

# ISO-IEC deliverables

**IS International Standards**

**PAS Publicly Available Specifications**

**TS Technical Specifications**

**TR Technical Reports**

**IWA\*  
International Workshop  
Agreements**

**Guides**

\*Specific to ISO

Normative Deliverables				Informative Deliverables
	International Standard	Technical Specification	PAS	Technical Report
Initiation	Form 4 for new project or a scope expansion of an existing publication	Form 4 for a new project or a scope expansion of an existing publication	Form 4 for a new project or a scope expansion of an existing publication	No NP ballot needed, committee resolution is sufficient
Timeframes	SDT 18, 24 or 36 months	SDT 18, 24 or 36 months	SDT 18, 24 or 36 months	No time frame, 3 year limit recommended
Consensus	DIS/CDV and FDIS are reviewed by all ISO/IEC members	DTS is reviewed by committee members only	DPAS is reviewed by committee members only	DTR is reviewed by committee members only
Approval Criteria	- 2/3 majority P-members - no more than 25% disapproval of all votes cast.	2/3 majority of P-members voting for publication	simple majority of P-members voting for publication	simple majority of P-members voting for publication
Lifetime	No life limit	No life limit	3 years, max life of 6 years	No life limit
SR (ISO)	Every 5 years	Every 3 years	Every 3 years	Not part of SR, review every 5 years recommended

# SyC Deliverable: the SRD

A Systems Reference Deliverable (SRD) is a deliverable produced by a SyC, which provides guidance on the use and application of standards in the corresponding SyC's domain.

**SRD Systems  
Reference  
Deliverable**

An SRD can be a normative document which may be referenced in the same way as any other IEC deliverable

The development, voting, approval for an SRD is same as TS.

# IS developed in SyC

The process for SyCs developing an IS shall be:

**IS International  
Standards**

- consultation with related TC/SCs for a need of an International Standard and agree on who will develop it (TC/SCs are priority)
- demand the approval to the SMB to begin the process to develop an IS.



# JTC 1 specific on PAS

In **JTC 1**, a PAS is a technical specification published by another organization, that meets criteria making it eligible for balloting and publishing as International standard.

Guidance in: SD 9, Guide to the Transposition of Publicly Available Specifications into International Standards

**PAS Publicly  
Available  
Specifications**

# Maintenance of catalogue

# Maintained relevance

International Standards respond to a **need**

This need must be assessed **over time**

ISO/IEC portfolio of standards has to keep its **relevance**

**Procedures** for maintenance are different in ISO and IEC

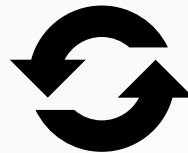
# How it is done in ISO

Revision/minor revision

Amendment

Correction

Mandatory systematic review



# Revision/minor revision

**Revision:** for update or change

New edition of the standard/TS/PAS/TR

Follows the same development procedure as International Standards/TS/PAS/TR

Minor revision: for changes not impacting technical content of a standard, circulation for FDIS vote directly

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# Amendment

**Change or addition to technical provisions**  
in a published standard

Stand-alone publication

Follows the same development procedure  
as standards

No more than 2 separate amendments  
against the same standard

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# Correction

**Correct mistakes** in a published standard/TS/TR/PAS

Inadvertently introduced

Causing safety issues or misleading for users

Publication of a corrected version



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**JTC 1:** publication of a separated Corrigendum

# Systematic Review

Every **5 years** for standards  
(3 y for TS and PAS)

Decision by simple majority of the committee  
P-members voting:

- Confirm
- Revise
- Withdraw (e.g. where an ISO standard is obsolete or not used in at least 5 countries)

Required demonstration of ongoing market  
relevance

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- **Confirm**
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relevance

# Systematic Review: specific for JTC 1

Decision by simple majority of the committee  
P-members voting to:

- **Confirm**
- **Revise**
- **Withdraw** (e.g. where an ISO standard is obsolete or not used in at least 5 countries)
- **Stabilize** (content is steady and not expected to change in time: no need for SR every 5 y)

Required demonstration of ongoing market  
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# Systematic Review

Decision by simple majority of the committee  
P-members voting to:

- Confirm
- Revise
- Withdraw (e.g. where an ISO standard is obsolete or not used in at least 5 countries)
- Stabilization (content is steady and not expected to change in time: no need for SR every 5 y)

Required demonstration of **ongoing market  
relevance**

# Corrections and Maintenance of Publications in IEC

Standards can be corrected/maintained in several ways:

1. **Corrigendum:** Corrections to a publication which otherwise will lead to misunderstanding
2. **Amendment:** Relatively small updates to an edition (<10% or <10 pages whichever is smaller)
  - Votes and comments are only attributed to the amended part
3. **New edition:** Large changes of text
  - Votes and comments are attributed to the whole document

Note: After **two amendments**, a new edition is required irrespective of the change.

- Corrigendum submitted by secretary and handled by Central Office
- Amendment and new Edition follow the same maintenance process

# Stability dates

- end of the stability period, where publication remains unchanged
- IS can have stability dates, typically between 3 and 12 years
- TS has stability date of 3 years
- PAS – maximum 2 x 2 years
- approved with NCs vote on FDIS and CDV/DTS/DTR/DPAS
- end of the year (31<sup>st</sup> Dec)

# Maintenance of Publications

- 1. The entire maintenance process is managed in a way, to be completed by end of Stability Date**
- 2. A review procedure initiated by the TC/SC Officers seeks NCs opinion**
  - withdraw, extend stability date, amend, revise
- 3. NCs feedback provided will be discussed**
  - during a plenary meeting, or
  - by correspondence (Q or DC)
- 4. The TC/SC officers circulate the Review Report (RR) formalizing the maintenance decision**
- 5. The work is assigned to a maintenance team (MT) or working group**
  - Process follow same steps as for standards development



DANKE!  
THANK YOU!  
MERCİ!  
GRAZIE!  
GRACIAS!  
DANK JE WEL!



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