

Review of AI-Assisted CRDM and Other AI Activities

A Launchpad for Further Discussion



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2026 NRC-Industry NDE Technical Information Exchange

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AI-Assisted RVUH Deployments in 2025

In Sweden

- Used for credited inspection at Ringhals 3 and 4
- Differences between qualification vs. inspection
- Initial skepticism/lack of trust
- Confidence grew over time as inspectors used the tool



In the US

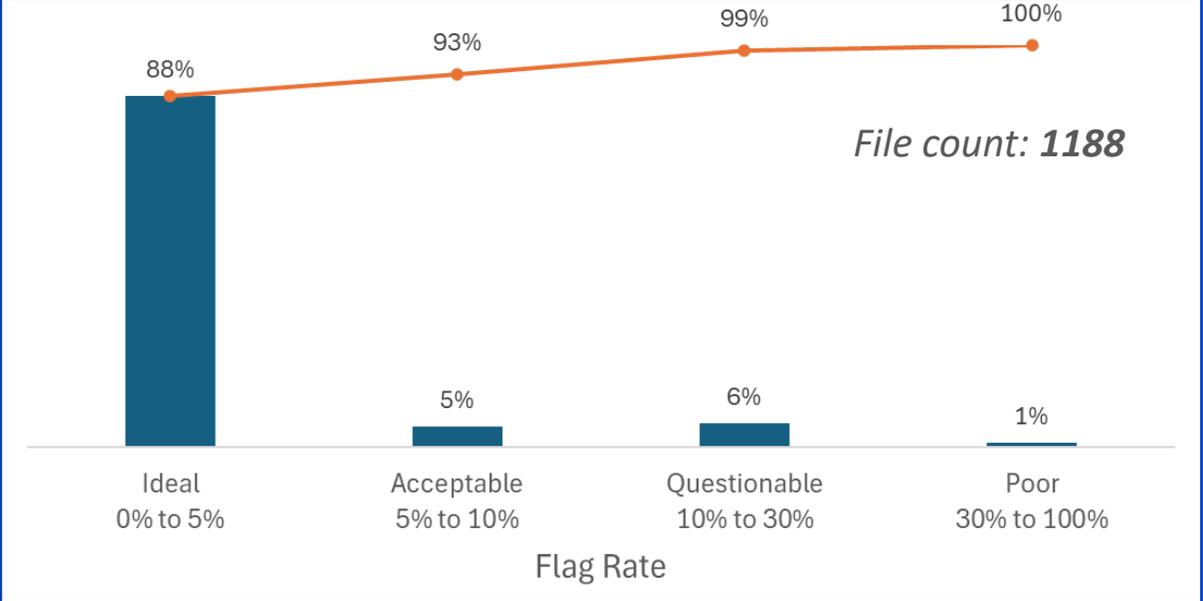
- Used to support site oversight (3x)
- PDI program ready to support ASME qualifications
- EPRI developing AI qualification protocol



Industry is starting to use and adopt the tool

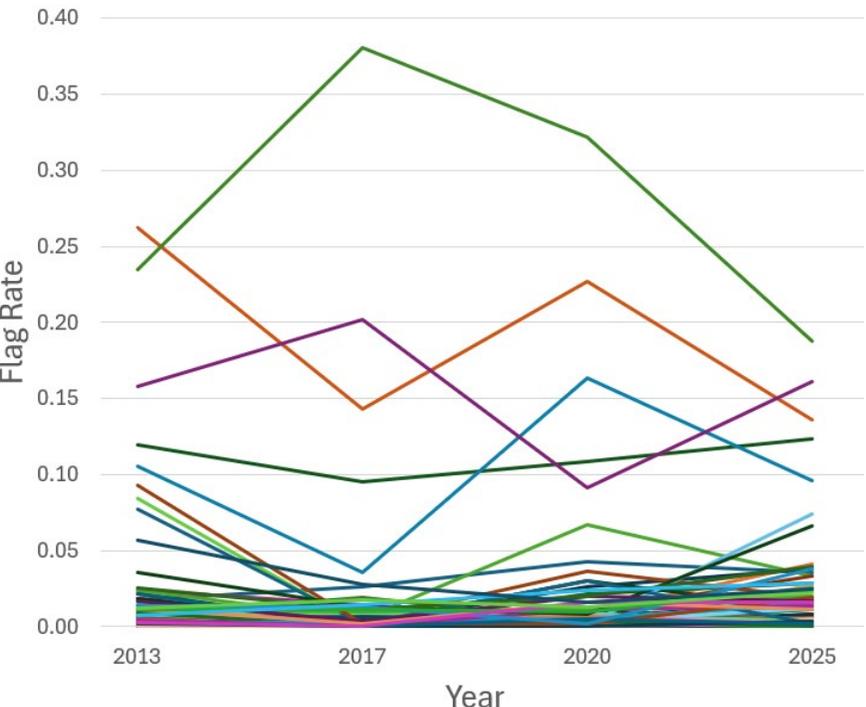
Performance Monitoring

Head	Inspection	Penetrations Analyzed	Average File Flag Rate
H02	ISI	81	6.8%
H03	PSI	44	0.3%
H04	ISI	56	1.1%
H05	PSI	73	3.2%
H06d	ISI	78	2.7%
H07b	ISI	54	2.6%
H08	ISI	63	1.2%



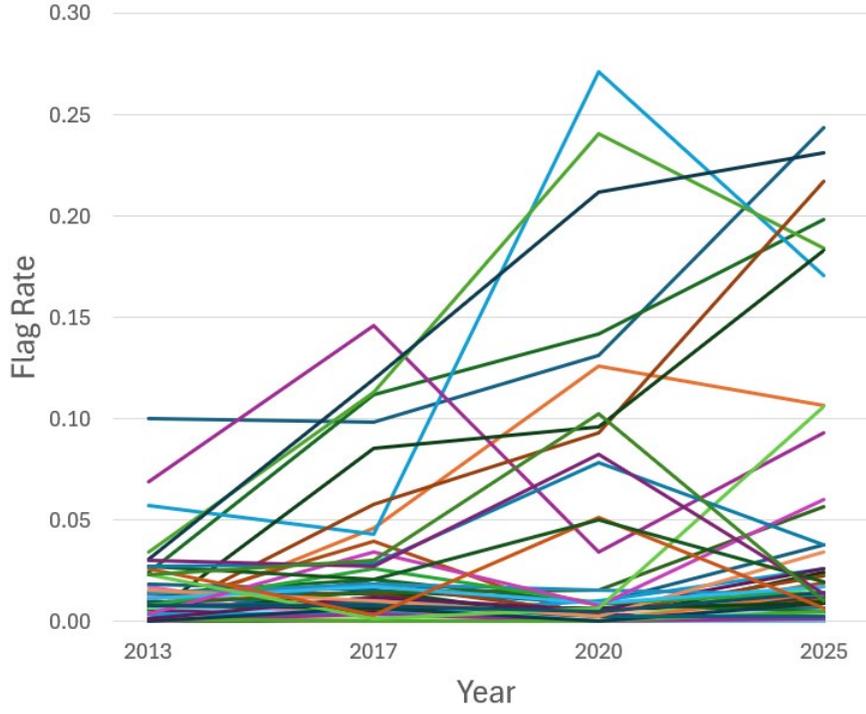
Example: Subsequent Inspections

COAF



- Higher flag rates for rotating probe

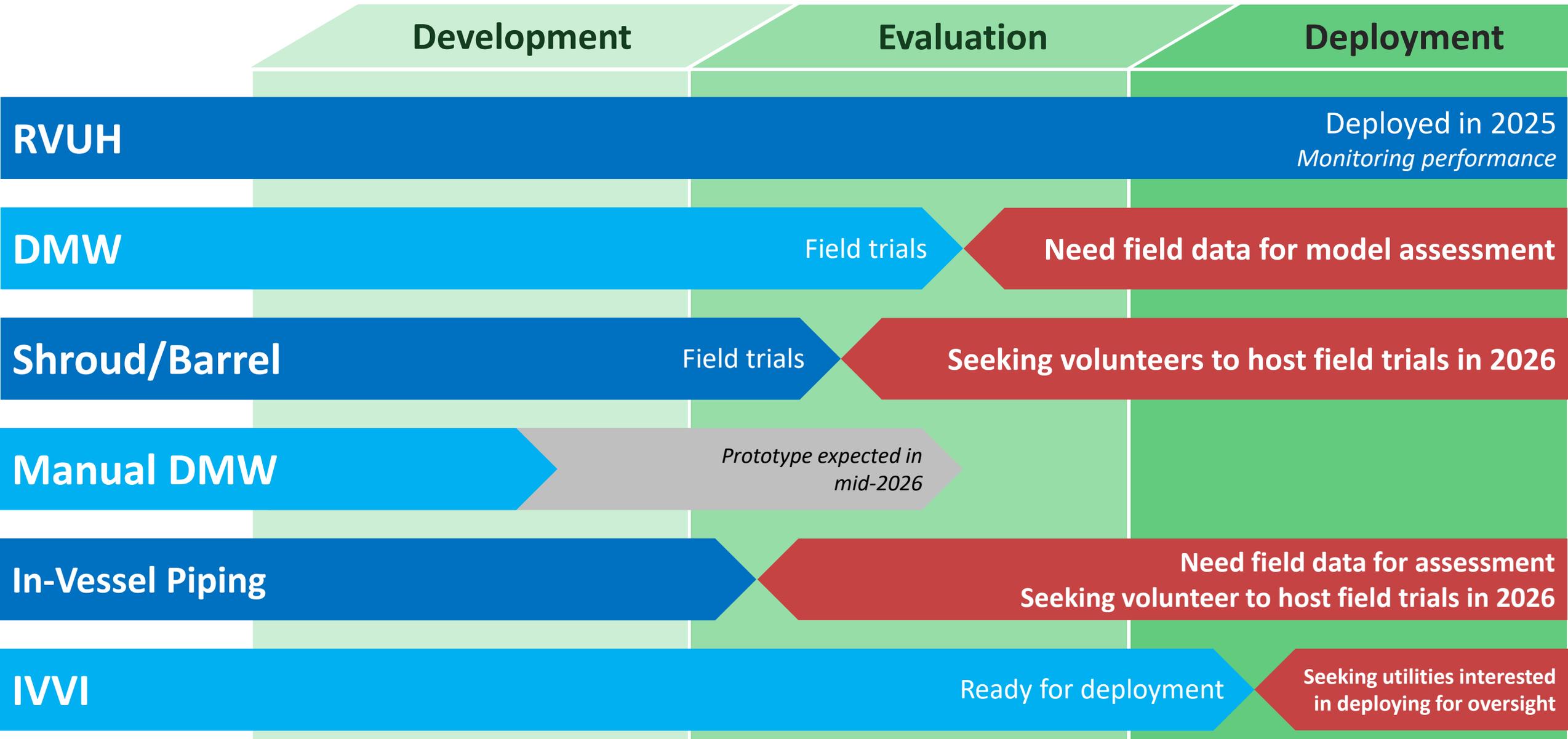
AOCF



- Overall increasing trend for penetrations with centering tab

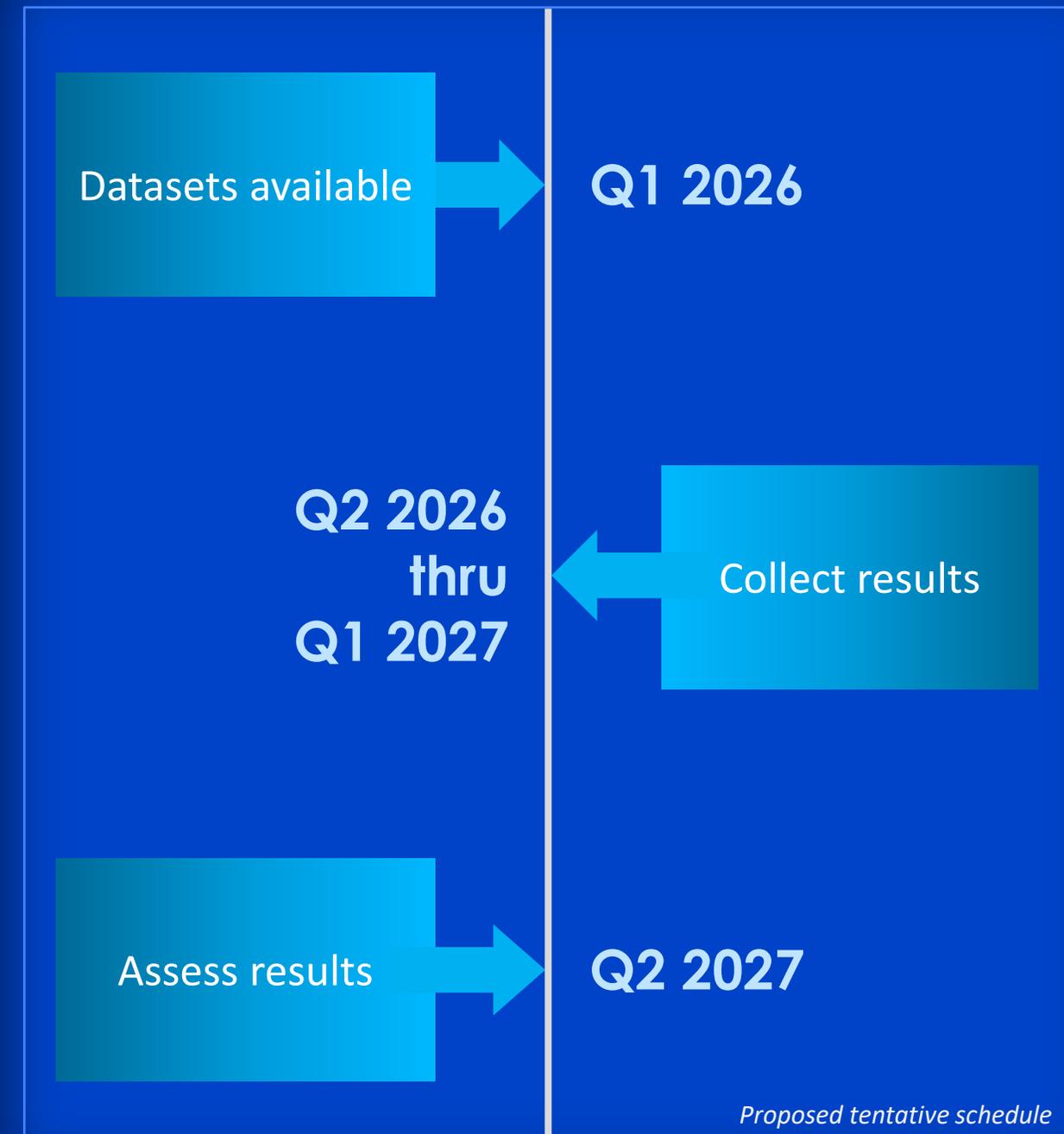
Flag rate below 5% for majority of penetrations across all inspections

AI-Assisted Analysis: Status & Needs



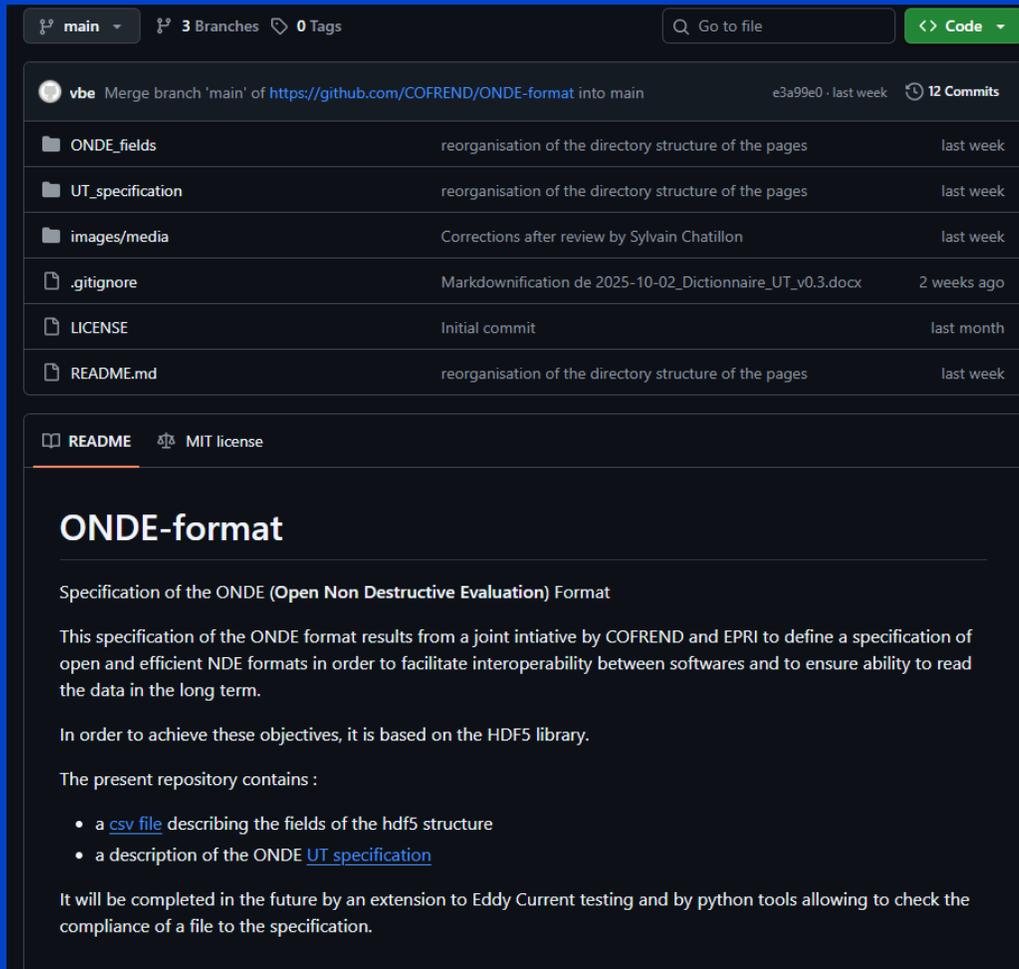
Virtual Round Robin: AI-Assisted Analysis

- Assessment of **AI + inspector**
 - NOT the AI model
- Target/scope:
 - DMW
 - EPRI-ENC-DMW-PA-1 ([3002010407](#))
- Logistics
 - ☁️ Participants download datasets from portal
 - Datasets *with & without* AI-assistance
 - ☁️ Participants submit answers to portal
- **Seeking volunteer participants**



Open NDE File Format Initiative

- Chosen format: COFREND's ONDE
 - Combines MFMC and ECUF
- Hosted at [GitHub](#)
- More information: [Terrill Massey](#)



The screenshot shows a GitHub repository for 'ONDE-format'. The repository is on the 'main' branch, has 3 branches, and 0 tags. The commit history shows a merge of 'main' into 'main' by user 'vbe' with 12 commits. The file list includes folders for 'ONDE_fields', 'UT_specification', and 'images/media', and files for '.gitignore', 'LICENSE', and 'README.md'. The README file is open, showing the title 'ONDE-format' and a subtitle 'Specification of the ONDE (Open Non Destructive Evaluation) Format'. The text in the README describes the initiative by COFREND and EPRI to define a specification for open and efficient NDE formats, based on the HDF5 library. It lists two items in the repository: a CSV file for the HDF5 structure and a description of the ONDE UT specification. It also mentions future work on Eddy Current testing and Python tools for compliance checking.

Open NDE File Format specification – Version 0.2

COFREND Working Group on Data and NDE



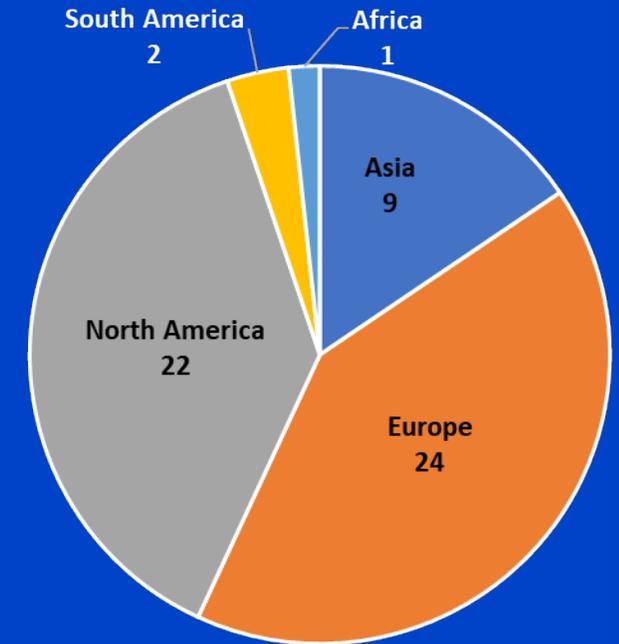
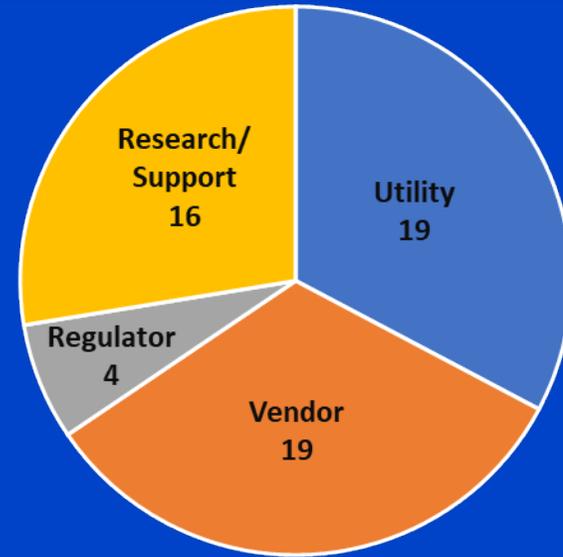
AI4NDE Interest Group

71 participants

organizations 41

13 countries

➤ To join, e-mail [Thiago](#)



- Increase awareness
- Share lessons learned
- Identify opportunities & gaps

Note: the above charts exclude the EPRI participants

Last Meeting

Wednesday, 03 December 2025, 0800 – 0930 (EST – UTC-5)		
Time	Topic	Lead
8:00	Opening Remarks	Thiago Seuaciuc Osorio (EPRI)
8:05	Field implementation of a qualified AI-assisted CRDM UT inspection at Ringhals NPP	Ola Johansson (Vattenfall)
8:25	IVVI Update: Fall Field Trials	Chris Joffe (EPRI)
8:45	Virtual Flaws for Machine Learning	Daniel Dopjera (UJV)
9:05	Update on Common Data Format Initiative	Terrill Massey (EPRI)
9:15	Open Discussion & Wrap up	Thiago Seuaciuc-Osorio (EPRI)
9:30	<i>Adjourn</i>	



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