

**WENDWG12**

**February 2022**

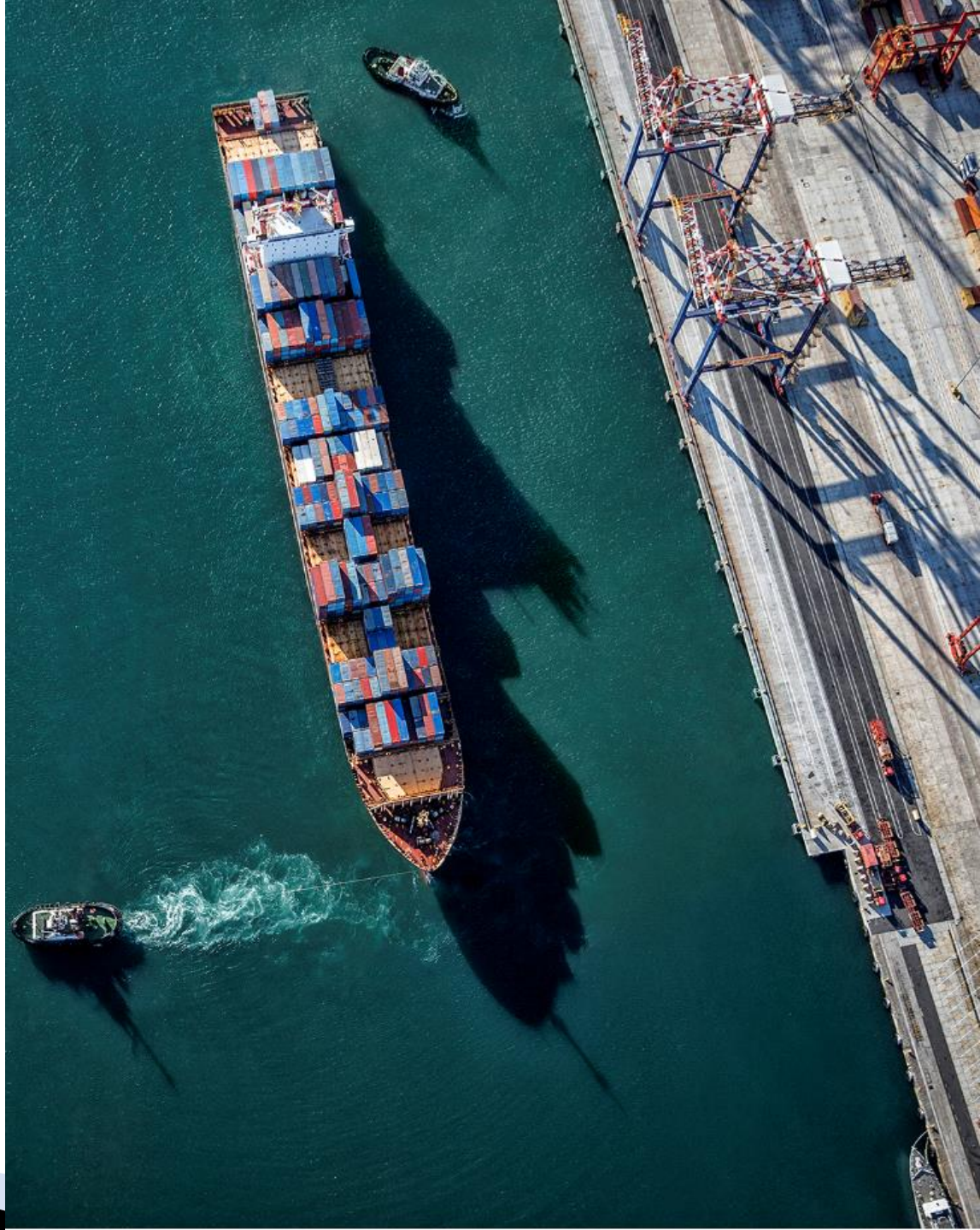
**IC-ENC Update**

James Harper  
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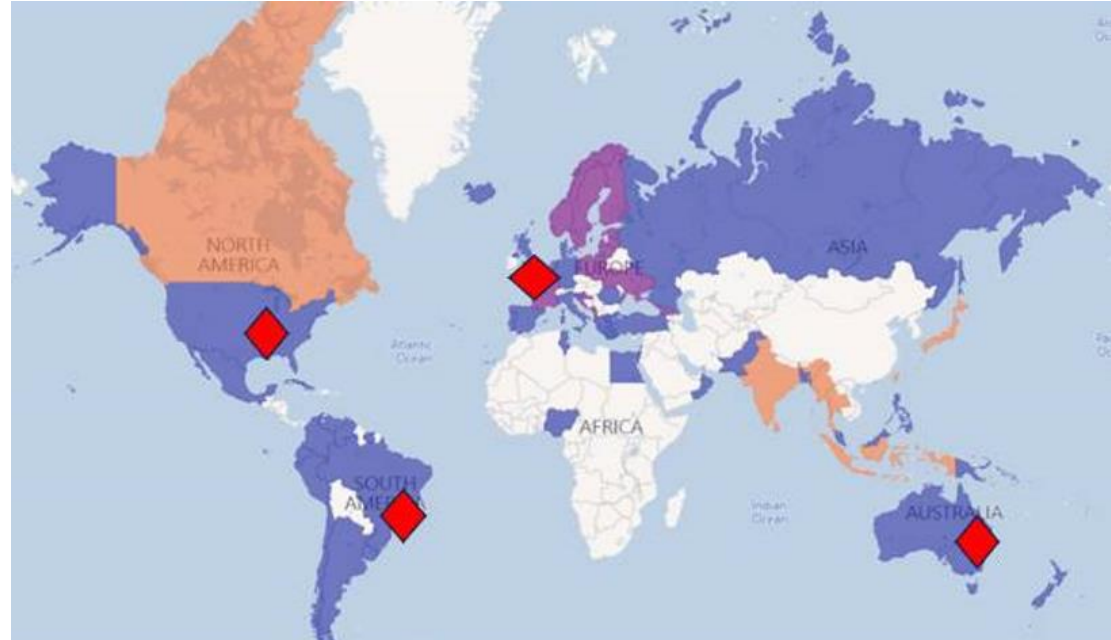
## IC-ENC Update

- Overview
- Core service summary
- Production Support (Learning Management System)
- Validation
- Distribution/Revenue Management
  - Launch of “non-ECDIS service”
  - Sales auditing tool
- S100 era services
  - Technical progress
  - Licensing principles



## Operating Structure

- Welcome to new IC-ENC Members this year:
  - Umhvørvisstovan (**Faroe Islands**)
  - Institute of Hydrometeorology and Seismology of **Montenegro**
- Now a total of 47 Members, ENC folio size: 9431
- “Member recommending Member”



- Continued operation of four office sites (UK, Aus, Bra, US)
  - International validation team operate from each regional site
  - Distribution / Finances / Management concentrated at UK Headquarters.

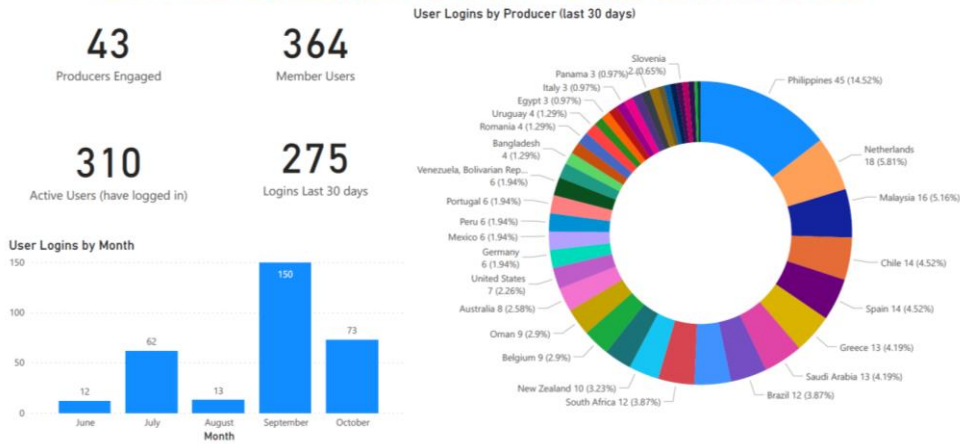
- IC-ENC Co-operation Arrangement developments
  - Changes endorsed by Steering Committee to take us into the S100 era – i.e. more than just ENC's
- Regional Office Governance Document published/endorsed by Steering Committee
- ISO9001 Certification renewal achieved
  - Extension to scope planned for the non-ECDIS service
- Work Plan – 3 year rolling structure is proving advantageous
  - New “Success Measures” endorsed by Steering Committee
  - Management Information/Reporting to SC
- Vice Chairs appointed: John Nyberg, Michael Andrew (Marc van der Donck continues as Chair)

# New “success measures”

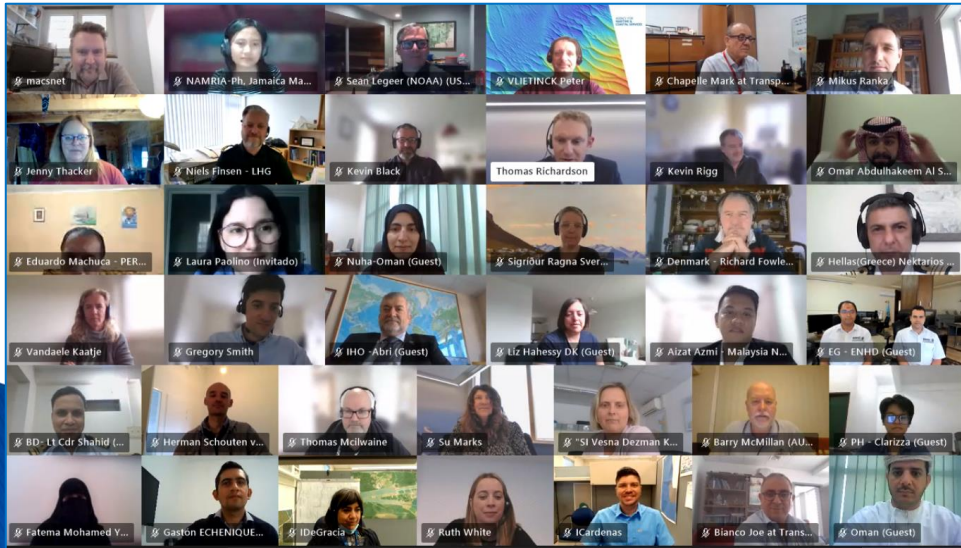
Ref	Title / Target / Measure	Comments
T1	IC-ENC Validation time: <ul style="list-style-type: none"> <li>• Updates; 3 working days</li> <li>• New Editions; 5 working days</li> <li>• New Cells; 10 working days</li> </ul>	A measure of our timeliness of service performance.
T2	IC-ENC Release; ENC's that have passed validation are released by IC-ENC within (an average of) 2 working days	A measure of our timeliness of service performance.
T3	Verification; 30 working days	A measure of our timeliness of service performance.
Q1	ENC Integrity: 100% of ENC's released to IC-ENC VARs have their integrity maintained.	A measure of our accuracy and safety of service
Q2	ENC Quality: “Urgent” ENC improvements identified by users are reviewed by IC-ENC within 2 working days, and IC-ENC re-validates/releases any resulting ENC changes within 2 working days. The other stages (HO action, VAR delivery to user) will be reported qualitatively	A measure of our timeliness, accuracy and safety of our service
Q3	Metafile Quality: (At least) 95% of exchange sets issued by IC-ENC have accurate & complete metafiles	A measure of our accuracy of our service / reduction in defects.
O1	IC-ENC's annual Net Promoter Score will improve by at least 5% on the previous year. This will be conducted in February each year.	Customer service and usability. To ensure IC-ENC services are based on meeting the requirements of the IC-ENC customer groups; Members, Value Added Resellers and Distribution Partners.

## Core service: Production Support

### IC-ENC Learning Management System - Overall Usage @20211027

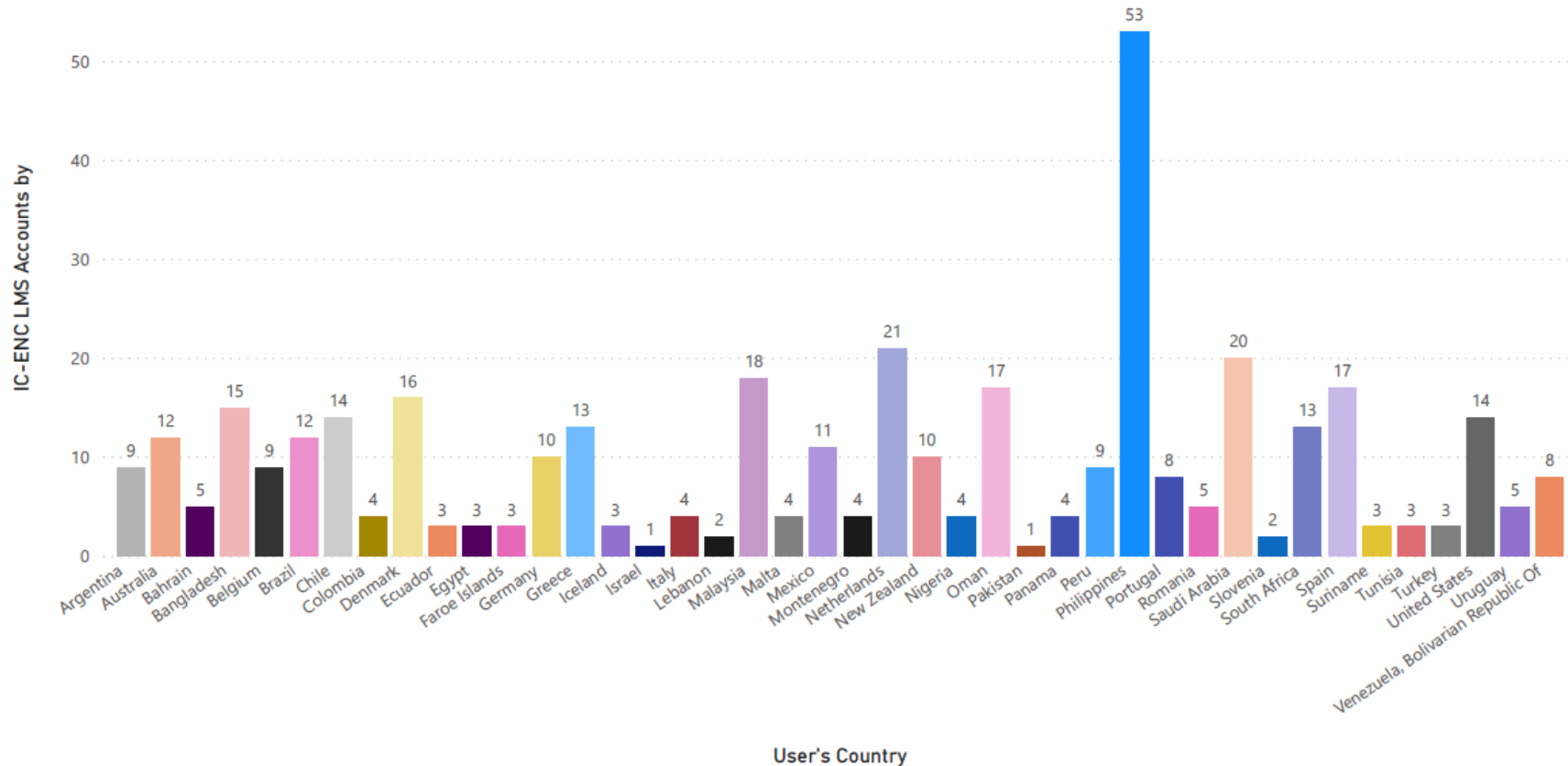


- Covid has forced us all online!
- Developed the supporting infrastructure (Learning Management System)
- Developed content and now delivering the service
- Forums/Q&A
- Production Support Working Group



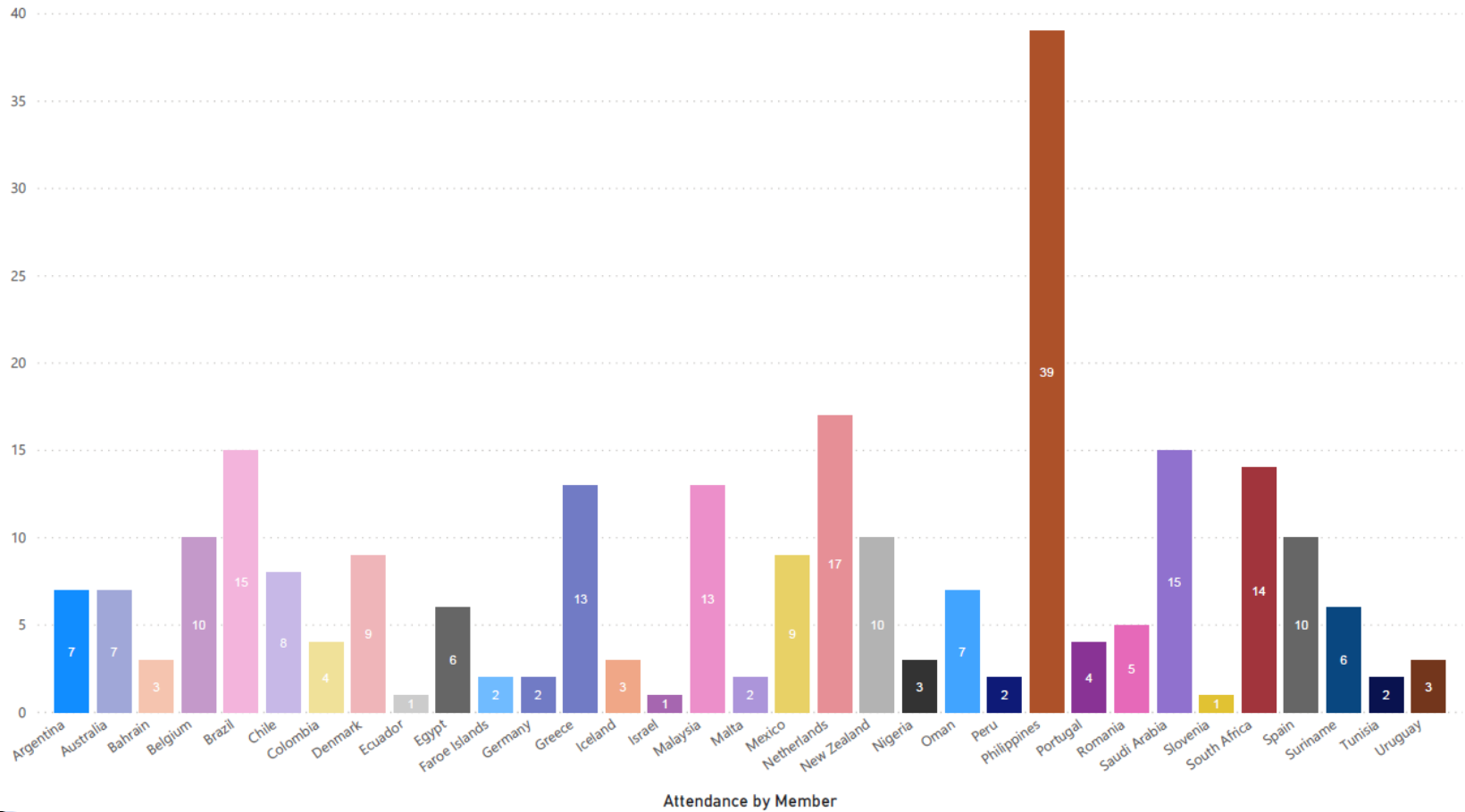
# Learning Management System – ic-enc uptake by Members (395 active users)

IC-ENC LMS Accounts by User's Country



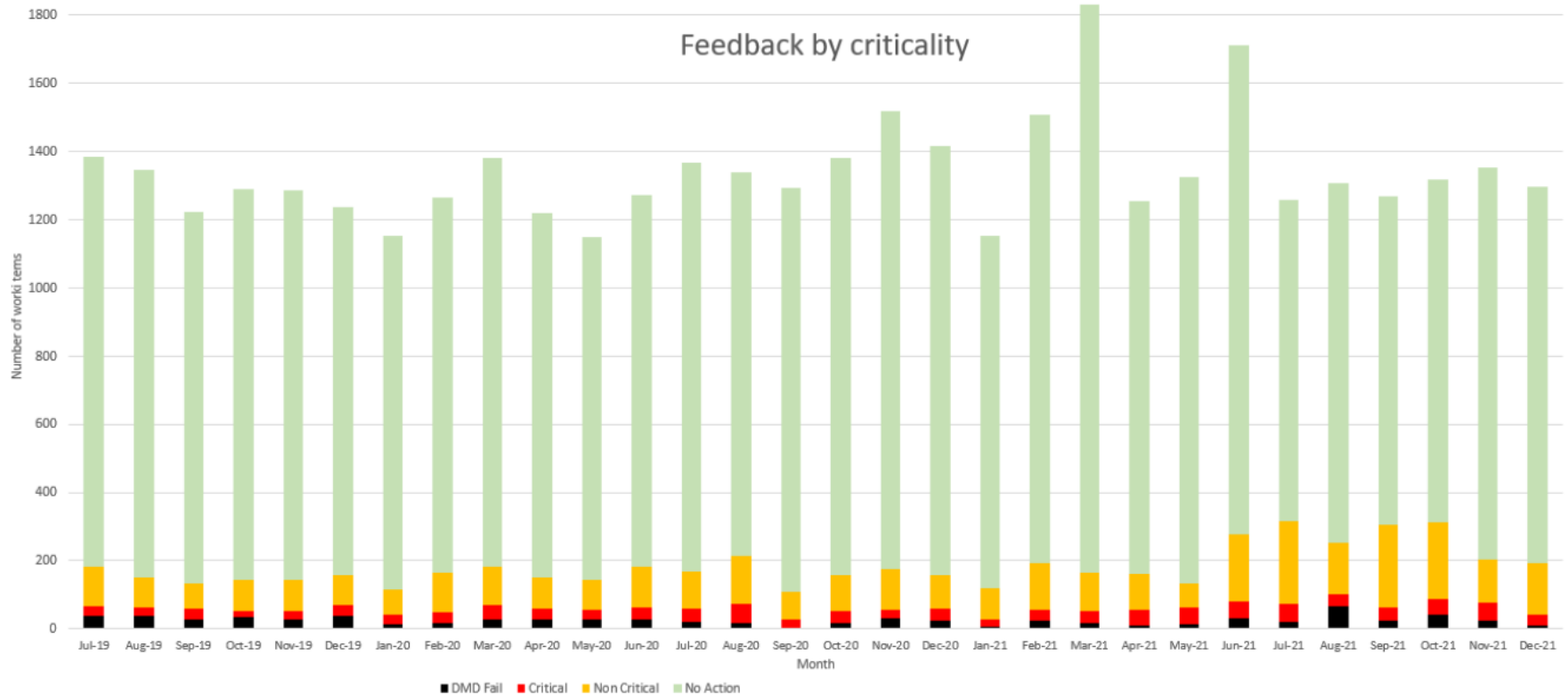
# S100 online training recipients (Q4/2021)

Introduction to S-100 Attendance by Member

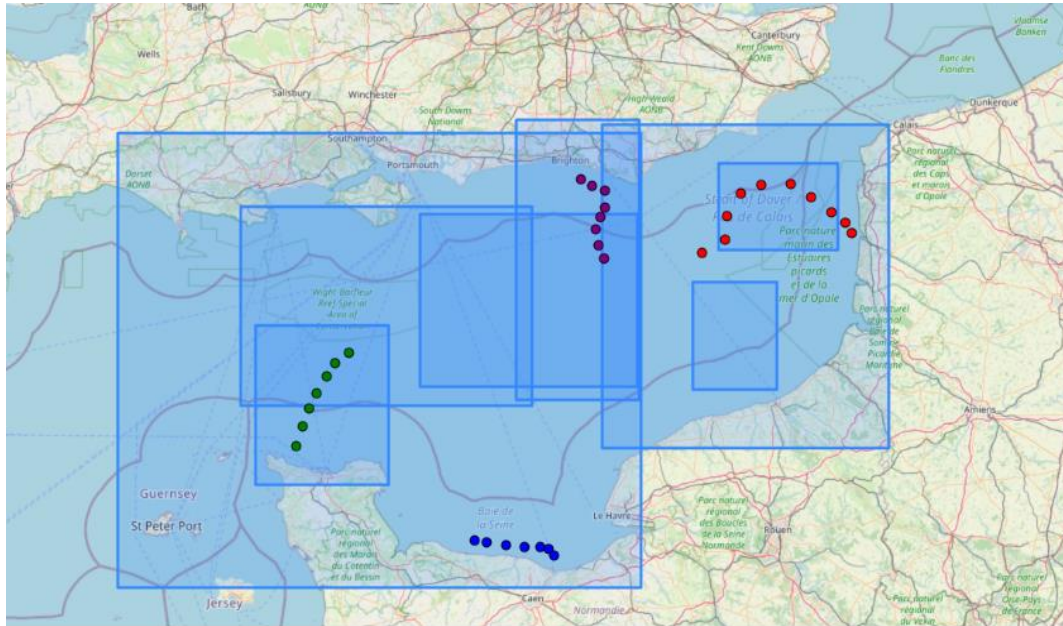




# ENC Validation – feedback content



## Core service Distribution: New developments: ENC Sales Audit tool



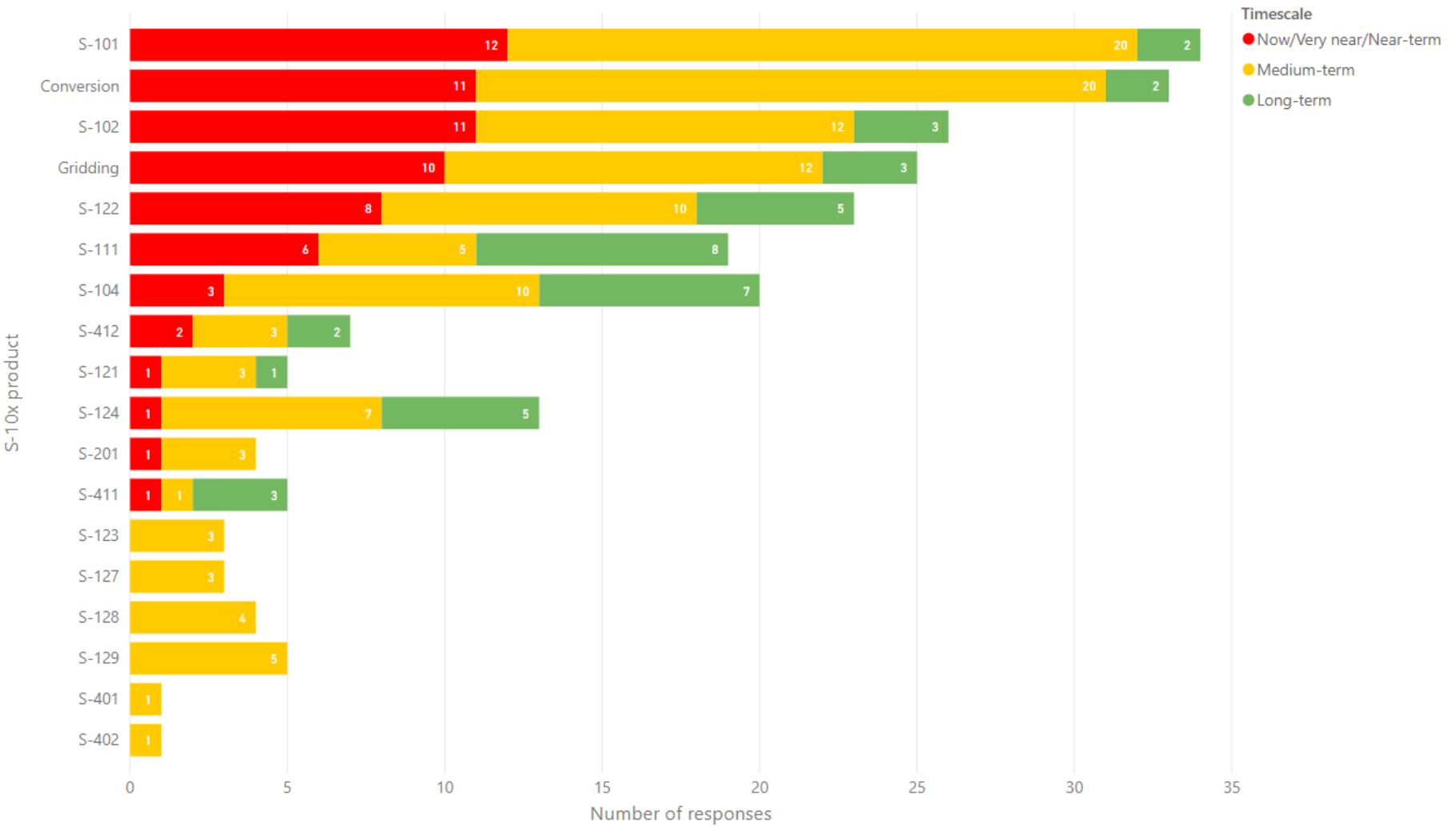
- Analyses:
  - AIS information
  - ENC catalogue
  - VAR sales reports
- Revenue to Members: over USD51M annually.
- Important additional assurance to IC-ENC Members regarding their financial interests / IC-ENC oversight of Value Added Resellers.

## New Distribution Service: “non-ECDIS” launched

	Organisation	Expression of Interest
1	ChartWorld	✓
2	GEC s.r.l	✓
3	Imray Laurie Norie & Wilson Ltd	✓
4	Magic Instinct	✓
5	Mapmedia	✓
6	Navico	✓
7	Navionics	✓
8	Navtor	✓
9	OneOcean	✓
10	Orca	✓
11	Renate Rosner Consult S.L	✓
12	Savvy Navvy	✓
13	SeaPilot	✓
14	Witherby Publishing Group	✓
15	Sii Tech	✓

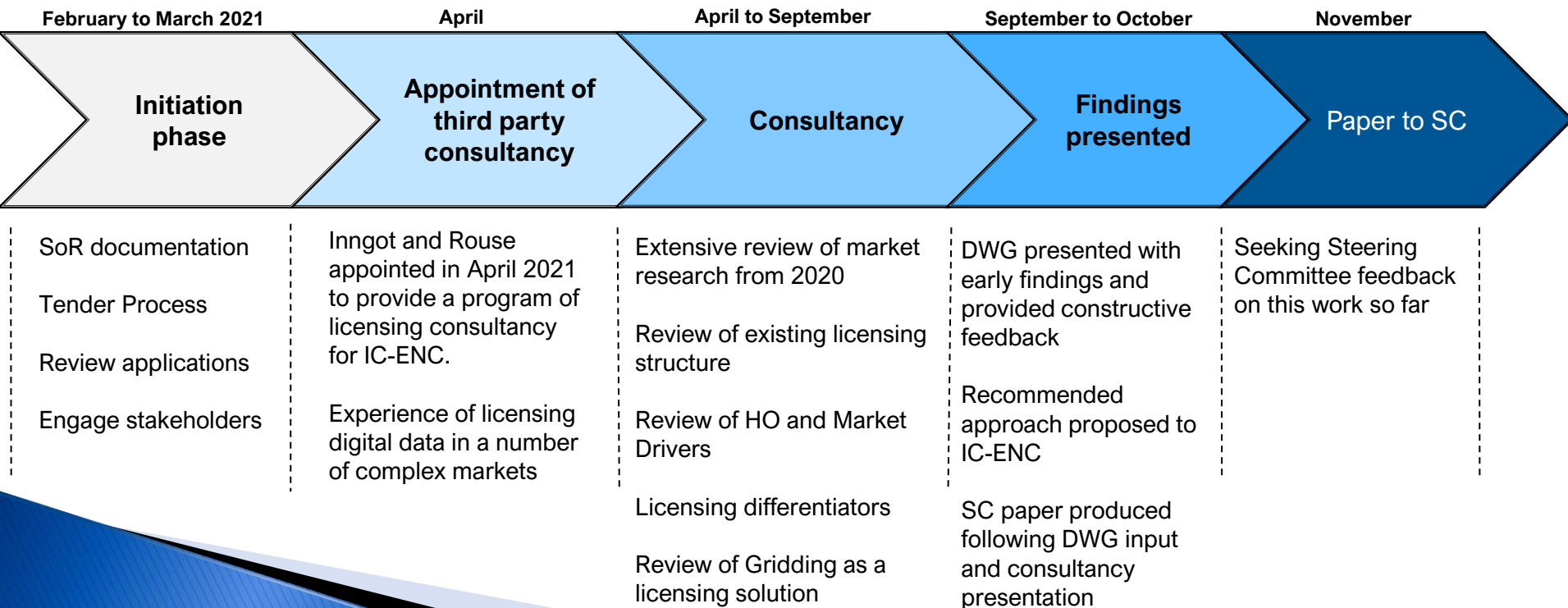
- Appointment of “Distribution Partners” in new distribution chain to support digital navigation of non-ECDIS craft.
- Updating regime
- Quality Management
- Non-core service from IC-ENC (“opt in” – 24 Members so far)
- Two Distribution Partners appointed so far: ChartWorld, RR Consult

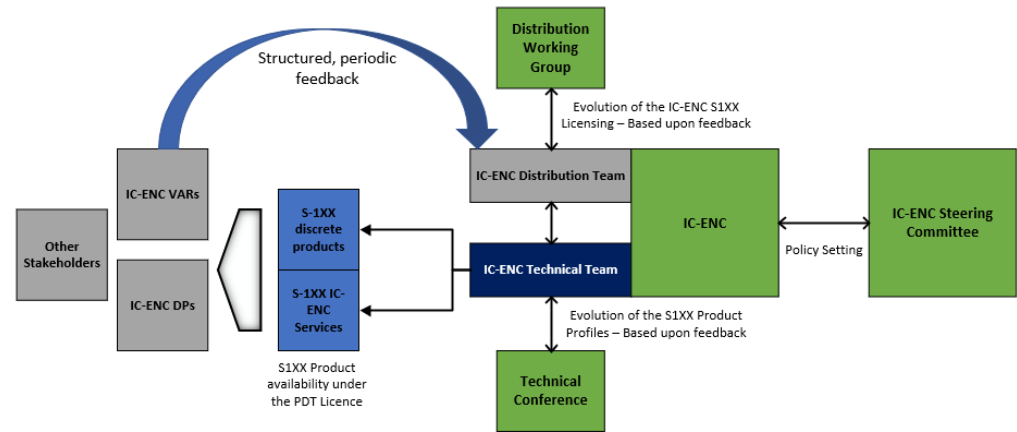
## New developments: S1XX services – Member priorities



## S-100 era licensing – IC-ENC “Distribution WG”

- IC-ENC Distribution Working Group has formed to act as a representative set of Members to consider IC-ENC distribution aspects (e.g. VAR appointment, licensing policies etc)
- Key task over 2021 (including third party consultancy):





**IC-ENC Work Plan Item 3d:**  
*“[For members who wish to opt in] - Establish a new comprehensive **product development and testing license** to support new and existing distribution services.”*

1. Australia
2. Belgium
3. Denmark
4. Egypt
5. Faroe Islands
6. Germany
7. United Kingdom
8. Greece
9. Iceland
10. Malaysia
11. Netherlands
12. New Zealand
13. Pakistan
14. Philippines
15. Portugal
16. South Africa
17. Spain
18. Suriname

## S-100 era licensing

Feature	Existing S57 ENC ECDIS	Existing S57 Non ECDIS	S100 SAP technical changes	S100 – interim policies (in development)					PRIMAR approach
				S-101	S-102	S-104	S-111	S122	Canada S102
Sales Unit	ENC	Folio	n/a						File
Price	Set by Member	Set by Member	Set by Member	Set by Member	Set by Member	Set by Member	Set by Member	Set by Member	
IC-ENC fixed fee	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
<b>1 month</b>	X	X	✓						X
<b>2 months</b>	X	X	✓						X
<b>3 months</b>	✓	X	✓	✓	✓	✓	✓	✓	✓
<b>4 months</b>	✓	X	✓						X
<b>5 months</b>	✓	X	✓						X
<b>6 months</b>	✓	X	✓	✓	✓	✓	✓	✓	✓
<b>7 months</b>	✓	X	✓						X
<b>8 months</b>	✓	X	✓						X
<b>9 months</b>	✓	X	✓	✓	✓	✓	✓	✓	✓
<b>10 months</b>	✓	X	✓						X
<b>11 months</b>	✓	X	✓						X
<b>12 months</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>PAYS (3 months)</b>	✓	X	✓						X
<b>Demo (12 months)</b>	✓	X	✓						✓
<b>R&amp;D (12 months)</b>	✓	X	✓	PDT	PDT	PDT	PDT	PDT	✓
<b>Training (12 months)</b>	✓	X	✓						?
<b>Trial (3 months, no cost)</b>	✓	X	✓						✓
<b>Sales Reporting</b>	24 hrs	Monthly	n/a						?
<b>Comments</b>	Maintained with PRIMAR under Joint RENC Model	Note, this option is not supported by PRIMAR	To build in the flexibility now for future policy decisions	The policies will be developed through the DWG and the iterated as experience grows via the PDT license					Included for information

### ▶ S-102 member production plans

S-102 Production Plans	Now/very near	Near-term	Medium-term	Long-term	Unknown	N/A
	1	10	12	3	8	1

### ▶ Work completed

- S102 Ingest & Registration Checks (Validation tests – 43)
- S-102 Knowledgebase created to include registration checks
- Product Profile
- S-102 Working Practice documentation (quality management)
- S100 Exchange Set / S102 release capability
- Subject of Technical Conference demonstration yesterday (60 representatives from IC-ENC Members).



### ▶ S-122:

S-122 Production	Now/very near	Near-term	Medium-term	Long-term	Unknown
	1	7	10	5	12

### ▶ Progress

- S-122 Registration Checks (47)
- Draft S-122 Working Practice
- Assessment of trial S-122 data

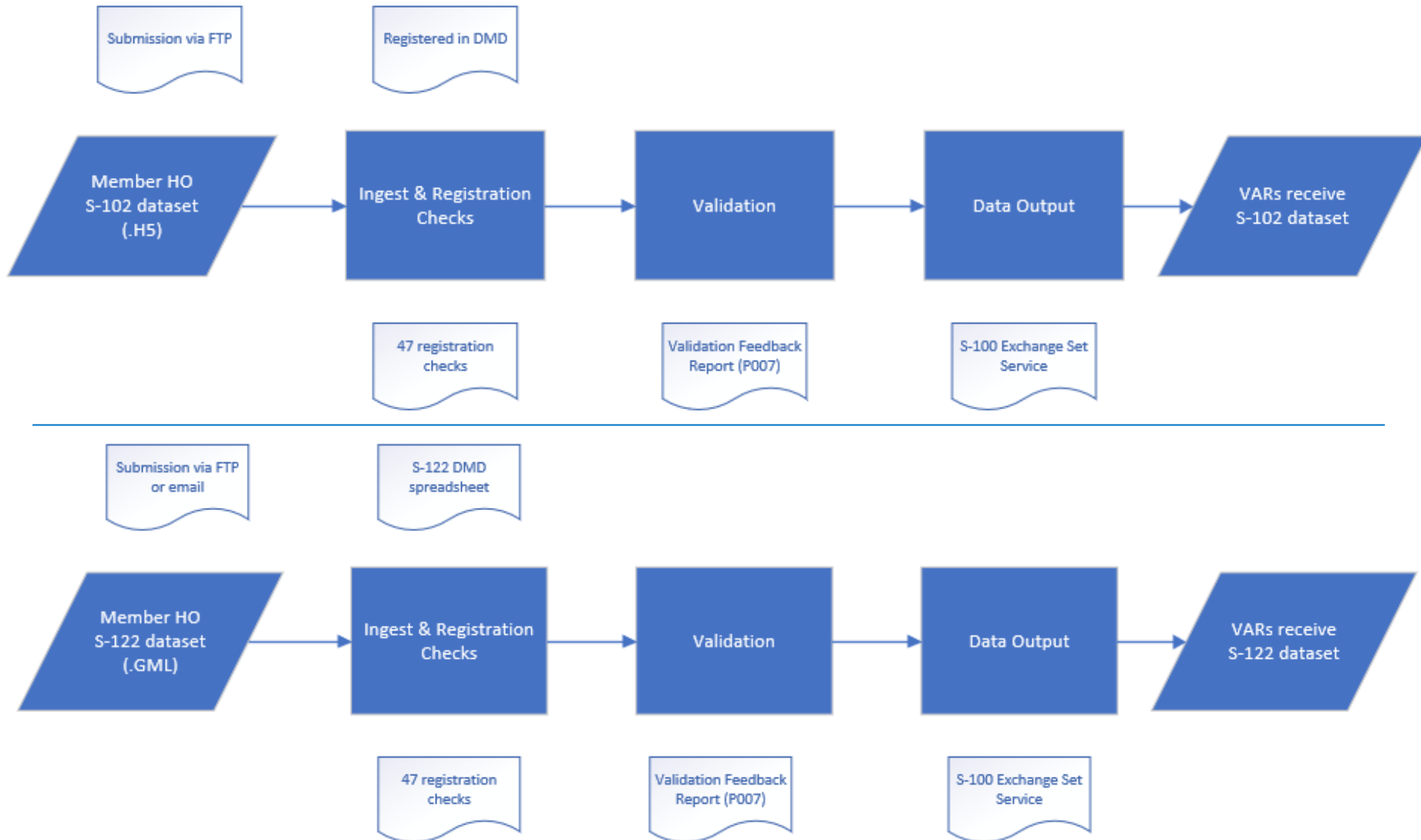


Fig 1: S-122 dataset displayed in NL S-100 Viewer

### ▶ Work in progress via Technical Conference

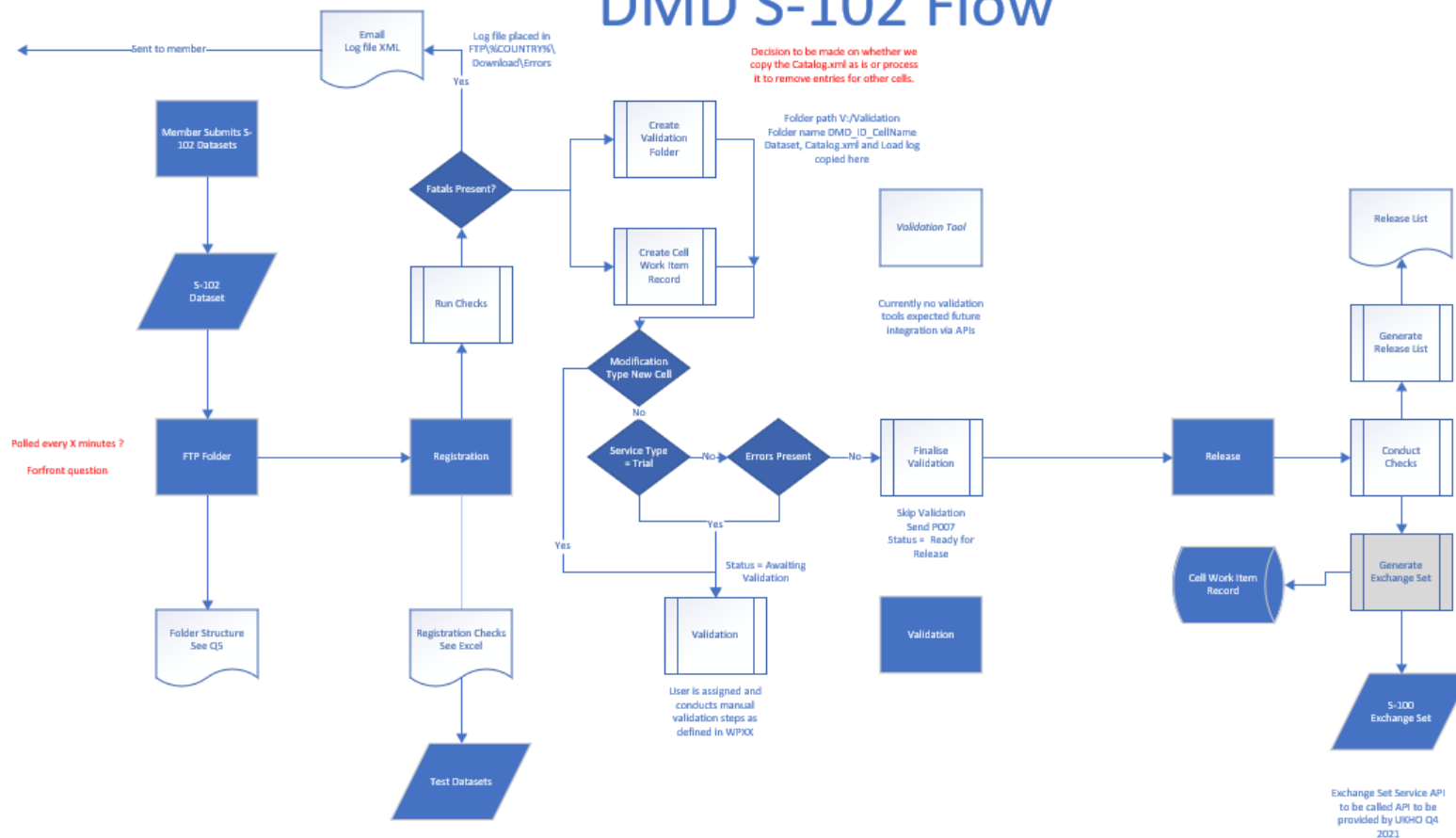
- Draft Service Description; consistency checks between S-122 and S-57/S-101; Draft Metadata Template; Draft Product Profile; Further DMD enhancement work to include ingest of .GML files

## S-102 & S-122 Process Flows – uses same principles



## S-102 flow

### DMD S-102 Flow



## S-102 Product Profile – example to illustrate the principle

### 12) VerticalAndSoundingDatum [S-102 PS - 12.7.4]

S-102 Product Specification, Edition 2.0.0, Section 12.7.4, shows the allowable vertical and sounding datums, for the mandatory attributes in S-102:

Role Name	Name	Description	Code	Type	Remarks
Value	approximateMeanLowerLowWater		15		
Value	meanHighWater		16		(MHW)
Value	meanHighWaterSprings		17		(MHWS)
Value	highWater		18		(HW)
Value	approximateMeanSeaLevel		19		
Value	highWaterSprings		20		
Value	meanHigherHighWater		21		(MHHW)
Value	equinoctialSpringLowWater		22		
Value	lowestAstronomicalTide		23		(LAT)
Value	localDatum		24		
Value	internationalGreatLakesDatum1985		25		
Value	meanWaterLevel		26		
Value	lowerLowWaterLargeTide		27		
Value	higherHighWaterLargeTide		28		
Value	nearlyHighestHighWater		29		
Value	highestAstronomicalTide		30		(HAT)

From the Product Specification, the S-102 Product Profile is populated, as shown in the extract below for vertical datum:

* IC-ENC S-102 Profile (S-102 2.0.0 - October 2019)							
* S-102 Reference	Recommendation	Requirement	In S-101	In S-102 2.1.0	Rationale	Assumptions	Conformance
12.7.4 - VerticalAndSoundingDatum	RENC recommendation - S-102 datasets shall use the same or an equivalent vertical datum as the corresponding ENC. (both S-57 and S-101)	As S-101 PS 12.1.2.4 (Enumeration values 1-30)	Yes - additional value	Yes - same	Vertical Datum of the entire dataset and Sounding Datum of the entire dataset. As PS (S-101 shows additional balticSeaChartDatum2000 code 44)	S-102 will be used in conjunction with ENC data (S-57 or S-101) and therefore should reference the same vertical datum to ensure depths are consistent.	Harmony check Vertical Datum

- Evolution to IC-ENC governance and technology in response to Members' requirements for future S100 services
  - Large range of stakeholders – different priorities (and....we have Members still grappling with the challenges of producing their first ENC...
- New 'success measures' set by Steering Committee
  - Timeliness, quality, customer satisfaction
- "Product Development & Testing" License, in conjunction with the "Product Profiles" is how we are thinking about the future S100 user
- New "non-ECDIS" Distribution service has launched
- Member stakeholder groups are very active; Technical Conference, Distribution Working Group, new Production Support Working Group... feeding up to the Steering Committee

## Questions / Discussion

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