Background
Total catches of world’s leading producers (2011)
(volume in tonnes live weight and percentage of total)

<table>
<thead>
<tr>
<th>Country</th>
<th>Catch</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>16 046 114</td>
<td>17.02%</td>
</tr>
<tr>
<td>Peru</td>
<td>8 254 261</td>
<td>8.75%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>5 713 101</td>
<td>6.06%</td>
</tr>
<tr>
<td>United States</td>
<td>5 162 997</td>
<td>5.47%</td>
</tr>
<tr>
<td>EU-28</td>
<td>4 889 188</td>
<td>5.18%</td>
</tr>
<tr>
<td>India</td>
<td>4 301 534</td>
<td>4.56%</td>
</tr>
<tr>
<td>Russia</td>
<td>4 261 503</td>
<td>4.52%</td>
</tr>
<tr>
<td>Japan *</td>
<td>3 848 955</td>
<td>4.08%</td>
</tr>
<tr>
<td>Chile</td>
<td>3 466 945</td>
<td>3.68%</td>
</tr>
<tr>
<td>Myanmar</td>
<td>3 332 979</td>
<td>3.53%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2 502 500</td>
<td>2.65%</td>
</tr>
<tr>
<td>Norway</td>
<td>2 433 811</td>
<td>2.58%</td>
</tr>
<tr>
<td>Philippines</td>
<td>2 363 679</td>
<td>2.51%</td>
</tr>
<tr>
<td>Thailand</td>
<td>1 862 151</td>
<td>1.97%</td>
</tr>
<tr>
<td>South Korea</td>
<td>1 761 785</td>
<td>1.87%</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1 600 918</td>
<td>1.70%</td>
</tr>
<tr>
<td>Mexico</td>
<td>1 571 437</td>
<td>1.67%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1 378 799</td>
<td>1.46%</td>
</tr>
<tr>
<td>Iceland</td>
<td>1 154 199</td>
<td>1.22%</td>
</tr>
<tr>
<td>Morocco</td>
<td>964 704</td>
<td>1.02%</td>
</tr>
<tr>
<td>Taiwan</td>
<td>903 892</td>
<td>0.96%</td>
</tr>
</tbody>
</table>

- Overfishing
- Illegal fishing

Stock depletion
Fisheries control & management

Data requests from:

- Coastal states
- Flag States
- (Regional) Fisheries management organisations
- NGO
- FAO
- Scientific bodies
Reporting requirements

- Vessel data
- Licence data
- Position data
- Catch data
- Gear data
- Landing data
- Sales data
- Scientific data
- Economic data

- Frequency
- Aggregation
- Format
- Availability
- Codes
- Deadlines
- ...

Different data, formats

- High Cost
- Poor data quality
- Very slow evolution
The IFDM programme goal

Deliver high quality data
In the most effective way
The approach

Standardisation

Technology

Business community
Standardisation
Progress

• **Project P-1000 Inception 09.06.2012**
• **Not “a walk in the park”**
  - Learning UN/CEFACT standardisation
  - Legal considerations
  - Political considerations
• **Strong support**
  - Advantages obvious
  - Potential to solve:
    - *issues with EU-ERS v3.1*
    - *Issues with other data flows*
FLUX Business sub-domains

P1000 - 1; General principles
P1000 - 2; Vessel domain
P1000 - 3; Fishing Activity (FA) domain
P1000 - 5; Sale domain
P1000 - 7; VMS domain
P1000 - 8; Inspection Report domain
P1000 - 9; Fishing Licence; Authorisation & Permit (FLAP) domain
P1000 - 10; Master Data Mngt. (MDM) domain
P1000 - 11; System domain
P1000 - 12; Aggregated Catch Data Report (ACDR) domain
Implementation in EU

Early 2016
- P1000 - 1; General principles
- P1000 - 12; Aggregated Catch Data Report (ACDR)
- P1000 - 7; VMS domain

Early 2017
- P1000 - 3; Fishing Activity (FA) domain
- P1000 - 5; Sale domain

Mid 2017
- P1000 - 2; Vessel domain
- P1000 - 9; Fishing Licence; Authorisation & Permit (FLAP)

Not on critical path
- P1000 - 10; Master Data Mngt. (MDM domain
- P1000 - 8; Inspection Report domain
- P1000 - 11; System domain
Outside EU

- Agreed record with Norway: VMS
- FAO; Global Fleet Register (vessel domain)
- Testing during 2016 with
  - NEAFC
  - NAFO
- Communication started with:
  - WCPFC
  - SEAFO
  - SPRFMO
  - Gabon
  - Morocco
  - Mozambique
  - Seychelles
  - Sao Tome
  - Canada
  - Faroe
  - Greenland
  - Iceland
  - United states

UN ECE Handbook
Technology
A module for each aspect of the **IFDM programme**:

- Electronic recording and reporting system (ERS)
- Vessel Monitoring System (VMS)
- Licence Workflow
- FLEET Project
- Aggregated catch data reporting
- Master Data Register (MDR)

**The Fisheries software suite:** a common layer with a modular approach

**Abilities:**
- receive all fisheries data
- analyse all fisheries data
- send all fisheries data

**Utilities:**
- visualise content
- receive content
- store content
Transportation Layer

• Configurable software
  – Based on SOAP
  – Including workflows for handling exceptions
  – "Bridge" to link local IT systems with the TL

• Protocol called "The envelope"
  – Set of parameters determining the behaviour of the software
  – Can contain any well formatted XML business content
  – Content unaware
## Envelope

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Code</th>
<th>Mandatory/Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>From</strong></td>
<td>FR(*)</td>
<td>M</td>
<td>Address of the envelope originator Endpoint.</td>
</tr>
<tr>
<td><strong>Operation number</strong></td>
<td>ON(*)</td>
<td>M</td>
<td>Unique Operation Number generated by the system.</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>AD</td>
<td>M</td>
<td>Address of the envelope destination Endpoint.</td>
</tr>
<tr>
<td><strong>Data flow</strong></td>
<td>DF</td>
<td>M</td>
<td>Data flow name.</td>
</tr>
<tr>
<td><strong>Message time out</strong></td>
<td>TODT</td>
<td>M</td>
<td>The Message Timeout given as an XSD DateTime (UTC). Indicating the time limit which the business content is considered to be expired.</td>
</tr>
<tr>
<td><strong>Acknowledge of receipt</strong></td>
<td>AR</td>
<td>M</td>
<td>Boolean indicating if an Acknowledge-of-Receipt (STAT) is expected by the originator Endpoint.</td>
</tr>
<tr>
<td><strong>Contact persons</strong></td>
<td>CT</td>
<td>O</td>
<td>Space-separated list of e-mail addresses of contact persons</td>
</tr>
<tr>
<td><strong>Verbosity level</strong></td>
<td>VB</td>
<td></td>
<td>Verbosity level telling which type of events need to be reported by e-mail</td>
</tr>
<tr>
<td><strong>Time out</strong></td>
<td>TO</td>
<td></td>
<td>Indicates the synchronous timeout value in seconds.</td>
</tr>
</tbody>
</table>
Network example

FLUX TL based network: Physical topology
Logical topology

Physical topology becomes "unimportant"
- Configuration can be adapted to new needs
- Data flows can be optimized
- Network can organically grow

Each node can be configured according to its role
- Load balancing between instances
- Automated data flow optimisation
State of Play

• **Version 1: Operational**
  - Transportation layer
  - DG Mare, EFCA, 20 EU Member States
  - NEAFC
  - Testing:
    - *NAFO, Norway...*

• **Version 2: Spring 2016**
  - Version 1
  - + VMS software
• **Version 3: Autumn 2016**
  - Version 2
  - + ERS Software (Fishing activities, Sales)

• **Version 4: ?**
  - Version 3
  - + Vessel & licence
For extra information

- IFDM deliverables:

  https://circabc.europa.eu/w/browse/9d6098eb-e128-45ae-a4ca-5703b31d8257