



MERMAN Overview

Marine Environment Monitoring and Assessment
National Database

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Background - NMMP

National Marine Monitoring Programme (Clean Safe Seas Monitoring Programme) was initiated in 1990s as a coordinated monitoring programme to provide data to satisfy the requirements of OSPAR and for UK assessments of contaminants and biological effects in shelf seas.

Data collected by 6 organisations that represent the fishery and environment protection agencies in England, Scotland and Northern Ireland.

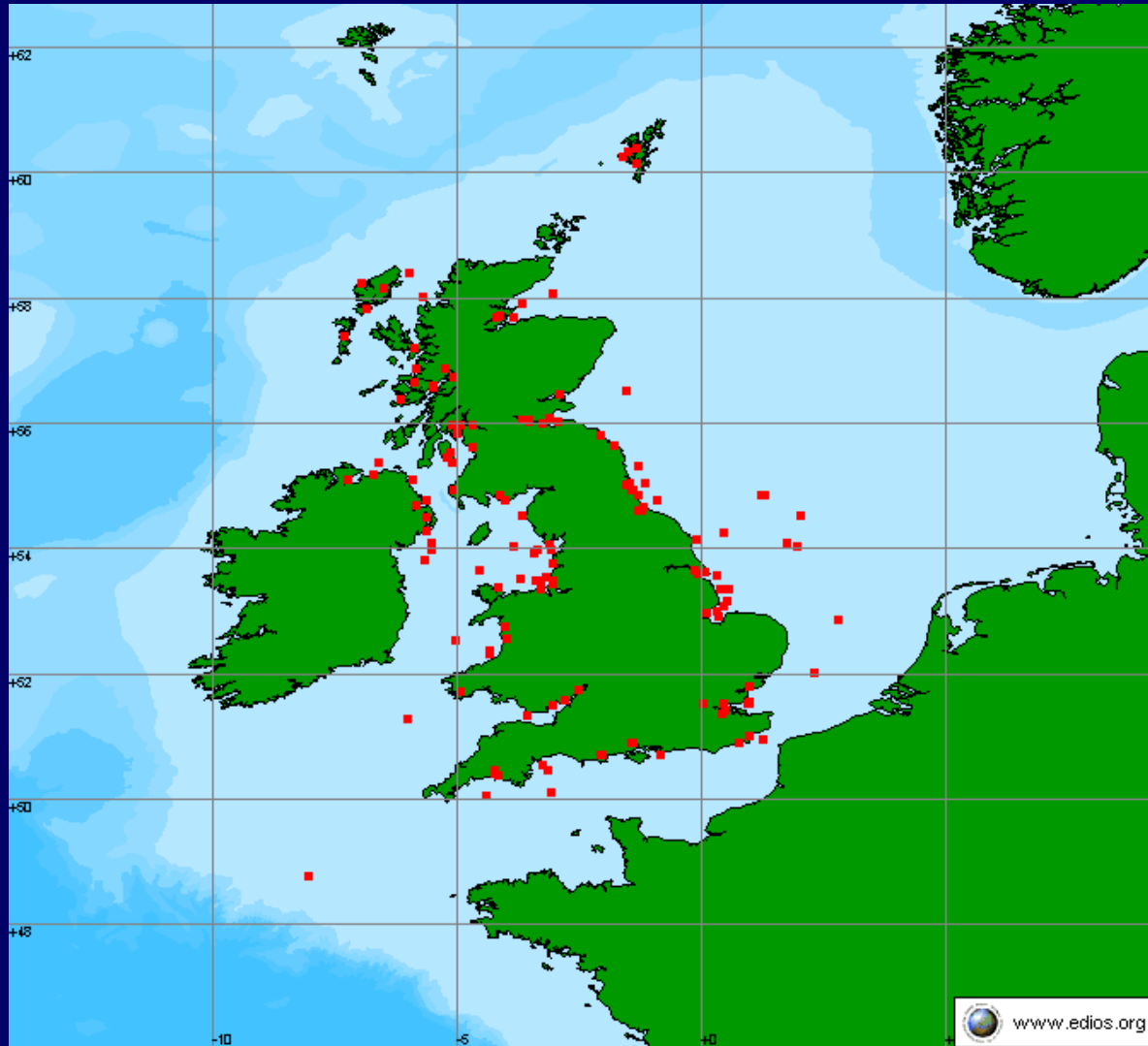
Analytical Quality Control Groups for Biology, Chemistry and Ecotoxicology. Procedures specified in manual 'The Green Book'.

Data is submitted to ICES each summer for OSPAR assessments in following autumn and spring.





Background - NMMP





Background - Old Database

Different data types held in different databases. Increasing need to carry out 'integrated assessments' to provide an ecosystem approach to management.

Change in culture w.r.t. data access Freedom of Information Act and Environmental Information Regulations

Streamline the AQC, data checking and reporting process

Provision for expansion to other data types

Recognized that a new database was required to carry out these tasks





MERMAN Build

DEFRA funded project on behalf of UK which was carried out by IBM

Group set up comprising of a subset of people from the NMMPWG to ensure that MERMAN built to required specification

May - BODC become involved to manage MERMAN. Data flow, reference tables, user control and reporting to ICES.

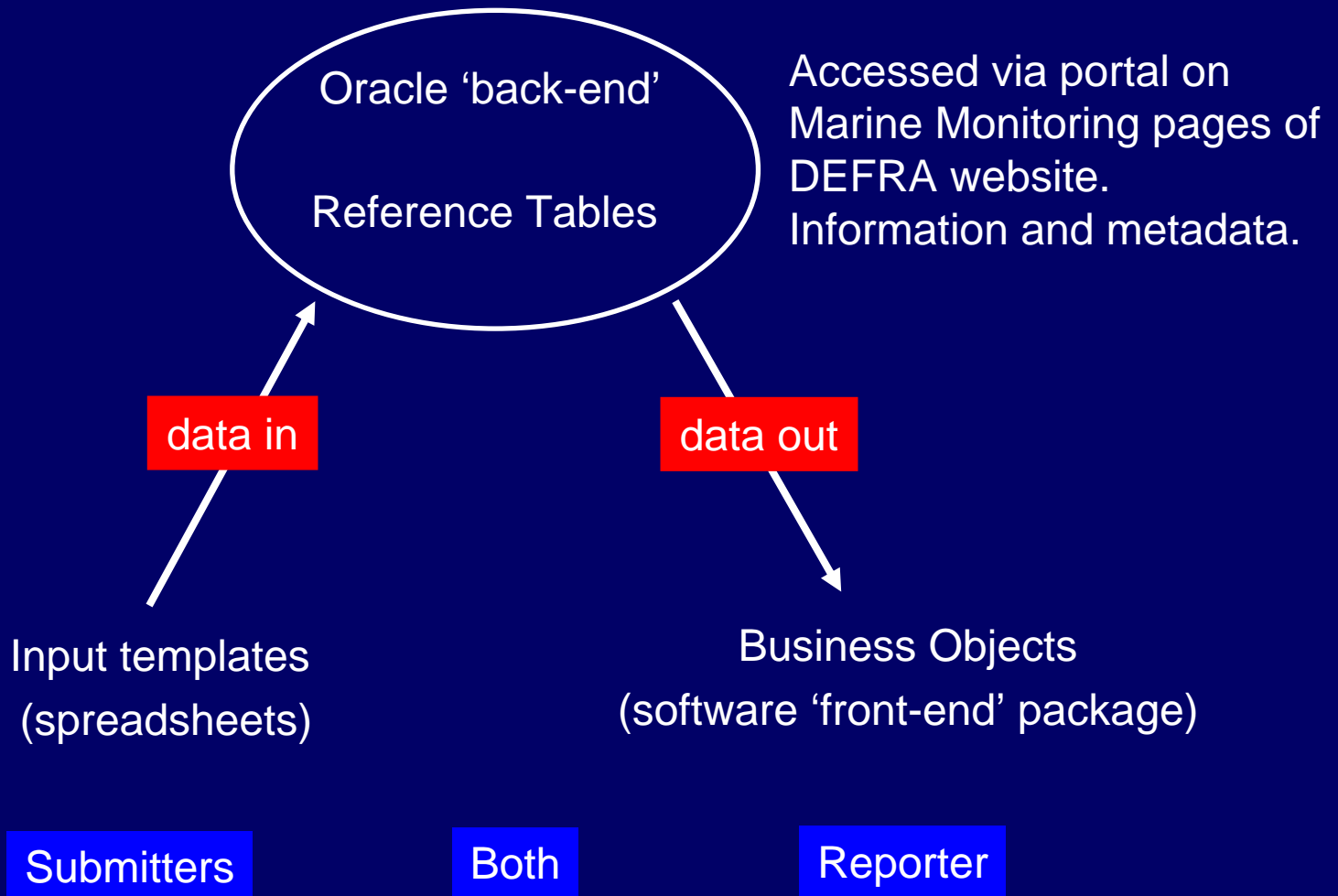
User Acceptance Testing carried out from May 22nd – testing that the system works as expected.

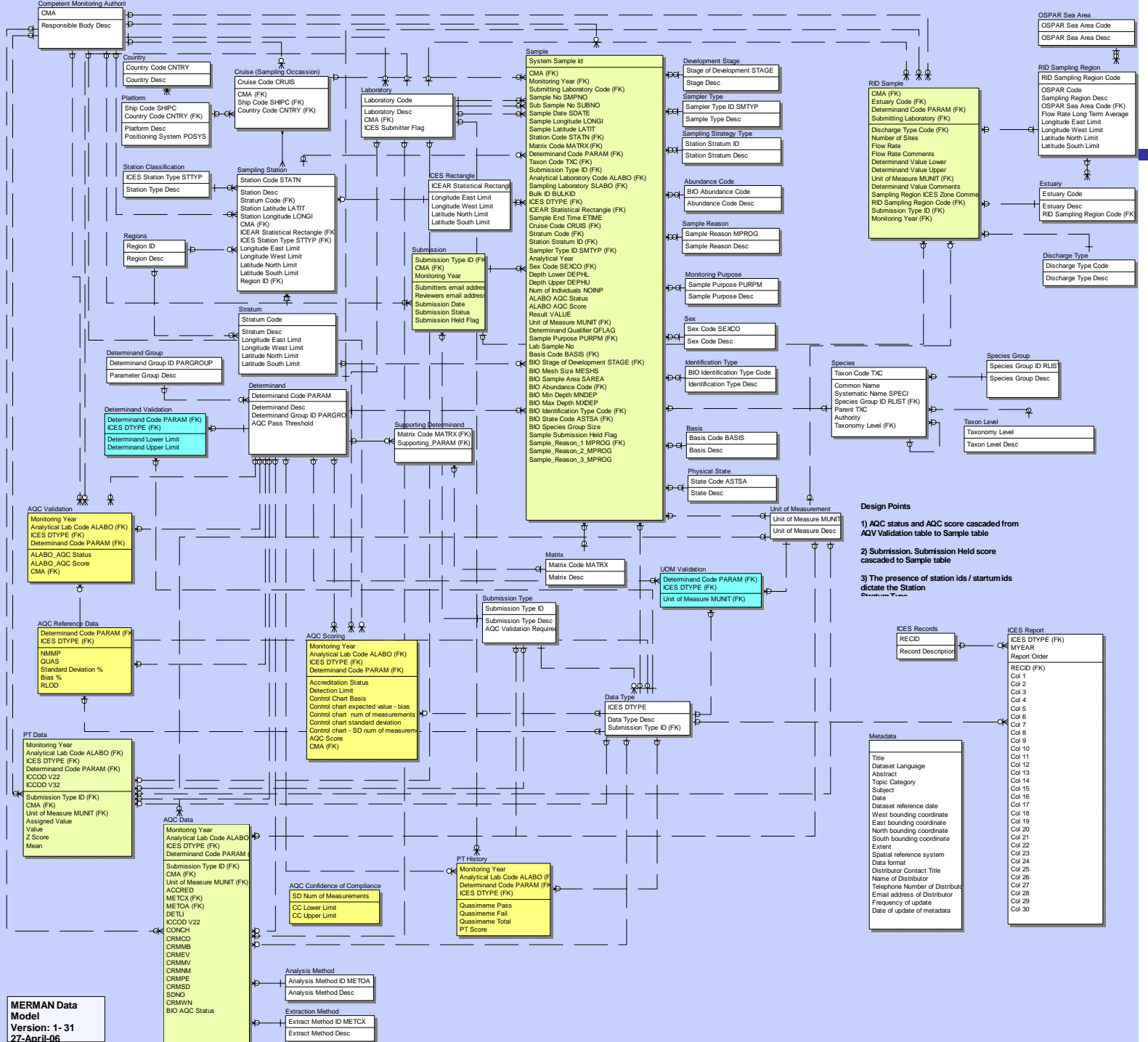
19th June - database becomes operational





MERMAN Components





Design Points

- 1) AQC status and AQC score cascaded from AQV Validation table to Sample table
- 2) Submission, Submission Held score cascaded to Sample table
- 3) The presence of station ids / startum ids dictate the Station System Type



MERMAN and ICES

- Reference Tables - to search by defined criteria, reference codes must be used to define entries. 'Controlled Dictionaries'
- To be consistent with ICES, MERMAN uses the ICES codes. <http://www.ices.dk/datacentre/reco/>
- Benefit of making submission of NMMP (CSEP) data to ICES more streamlined.
- Potential that the data may be made more widely available by mapping different code dictionaries to other organizations under european projects.





Reference Tables

Ship Codes

Parameter Codes

Species List

Units of Measurement

Analysing Laboratory

Matrix

Species List

Etc.....

Matrix Reference Table

| Code | Description |
|--------|--------------------------------------|
| AF | Sea water sample - After filtration |
| BF | Sea water sample - Before filtration |
| LI | Liver |
| MU | Muscle |
| SED63 | Sediment - <63 micron fraction |
| SEDtot | Sediment - untreated total |
| WO | Whole organism |
| | etc etc etc.... |

Parameter Reference Table

| CODE | DESCRIPTION |
|----------|-----------------------------------|
| ABUND%C | Abundance coverage (%) |
| ABUNDNR | Abundance number (number counted) |
| ABUNDSC | Abundance scale (scale) |
| ACAN THO | Acanthochondria sp. |
| ACNE | acenaphthene |
| AG | silver |
| AGMAX | age (max) |
| AGMEA | age (mean) |
| AGMIN | age (min) |
| AIRTEMP | Air temperature |
| AL | aluminium |
| ALD | aldrin |
| ALKY | total alkalinity |
| AMON | ammonium (NH4-N) |
| AMTR | ametryn |
| ANT | anthracene |
| AS | arsenic |
| ASH | ash content |
| ATRZ | atrazine |
| AZE | aziphos-ethyl |
| AZM | aziphos-methyl |
| BA | barium |
| BAA | benzo[a]anthracene |

BODC are the only organisation who has control of these files



Validation Rules

Give the database intelligence so that incorrect submissions are not allowed eg determinands must have correct unit of measure for the data type.

| Determinand Code | ICES Data Type | UoM |
|------------------|----------------|-------|
| ABUNDNR | ZB | nr |
| AG | CF | ug/kg |
| AG | CS | ug/kg |
| AG | CW | mg/ml |
| AL | CF | % |
| AL | CS | % |
| AL | CW | % |
| ALD | CF | ug/kg |
| ALD | CS | ug/kg |
| ALD | CW | ng/l |
| AMON | CW | uM |
| ANT | CF | ug/kg |
| ANT | CS | ug/kg |
| AS | CF | ug/kg |
| AS | CS | mg/kg |
| AS | CW | ug/l |



Access to MERMAN

Access to MERMAN through a DEFRA portal

Access falls into the three categories of submitters, reporters or both.

Further categories of reporters with access to Business Objects will be specified in the future. Eg. which users have access to monitoring data and AQC data under which time scales. Put in place a data policy that:

- Available for national and international assessments as required
- Gives scientists opportunity to publish their data before being made public
- Conforms to the Freedom of Information Act and Environmental Information Regulations
- Available MDIP principles
- Ensures that the data is used in the appropriate manner.
- Maximises the use of data





Importance of Data Management for MERMAN

Collecting Samples: £10,000 – £1,000,000

Analysing Samples: - £1000 – £100,000s

Data Management: £100 - £10,000s

Data Management is the most essential aspect of monitoring but if failed to do correctly may compromise the whole programme

