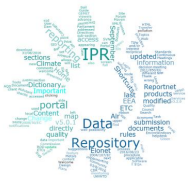


## Plenary meeting – 6 November

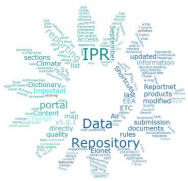
## AQ eReporting implementation



# 1 AQ eReporting: overview of submission status

## Status of data reporting (H-K 2016)

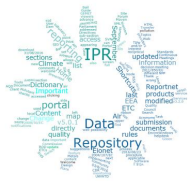
- 14 countries reported Plans (H),
  - 13 countries reported Source Apportionment (I),
  - 10 countries reported Scenarios (J),
  - 13 countries reported Measures (K).
- 
- Work on-going to improve data monitoring for H-K



# 1 AQ eReporting: overview of submission status

## Status of data reporting (B-C preliminary 2019)

- 31 countries reported AQ zones with B preliminary 2019,
- 30 countries reported data for C preliminary 2019.
- North Macedonia started AQ zones reporting.



# 1 AQ eReporting: overview of submission status

## Status of data reporting (B-G 2018)

- Record nr of 25 envelopes reported in a day (25/09),
- Record nr of 87 files reported in a day (20/09),
- One country has not reported any (D and E1a) data so far,
- One EU country has not reported attainment (G) yet,
- 3 countries have not reported E1b (although D1b reported),
- Some correction requests are still pending.

800 geometries

~100,000 records of meta & compliance information

AQ zones (B)

Assessment regimes (C)

Attainment (G)

Meta on measurements / models (D&D1b)

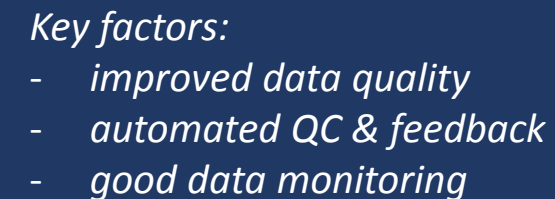
Primary data (E1/2a & E1b)

~12,500 values / hour (E2a)

~167,000,000 values (E1a)  
99 files (E1b)

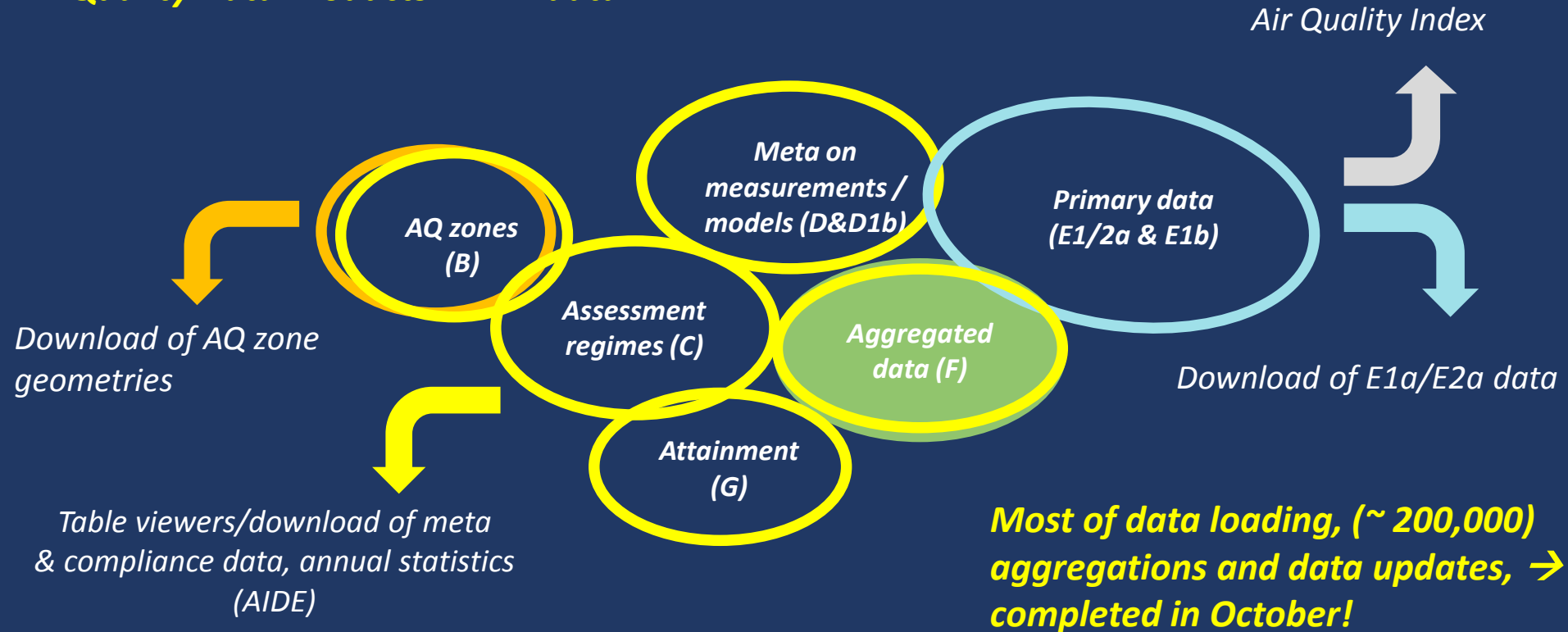
Most of feedback, data re-submissions, data consistency

**Most of feedback, data re-submissions, data consistency  
~ 95% → completed in October!**



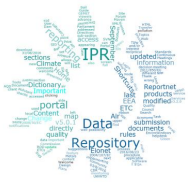
# 1 AQ eReporting: overview of submission status

## Air Quality Data Products – LIVE data



Key factors:

- good quality of data
- automation of processing
- technologies



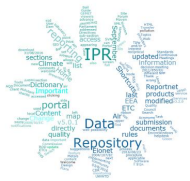
# 1 AQ eReporting: overview of submission status

## ReportNet (issues in September 2019)

- Random issues with (batch) harvesting,
- Random unexpected errors causing files to remain in drafts,
- Long QC runs with some cases (BE, LT with E1a/673 dataflow) where the QC had to be stopped and restarted.

## QC implementation:

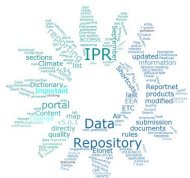
- New IT team dealing with QC system.



# 1 AQ eReporting: overview of submission status

Thank you for your work!

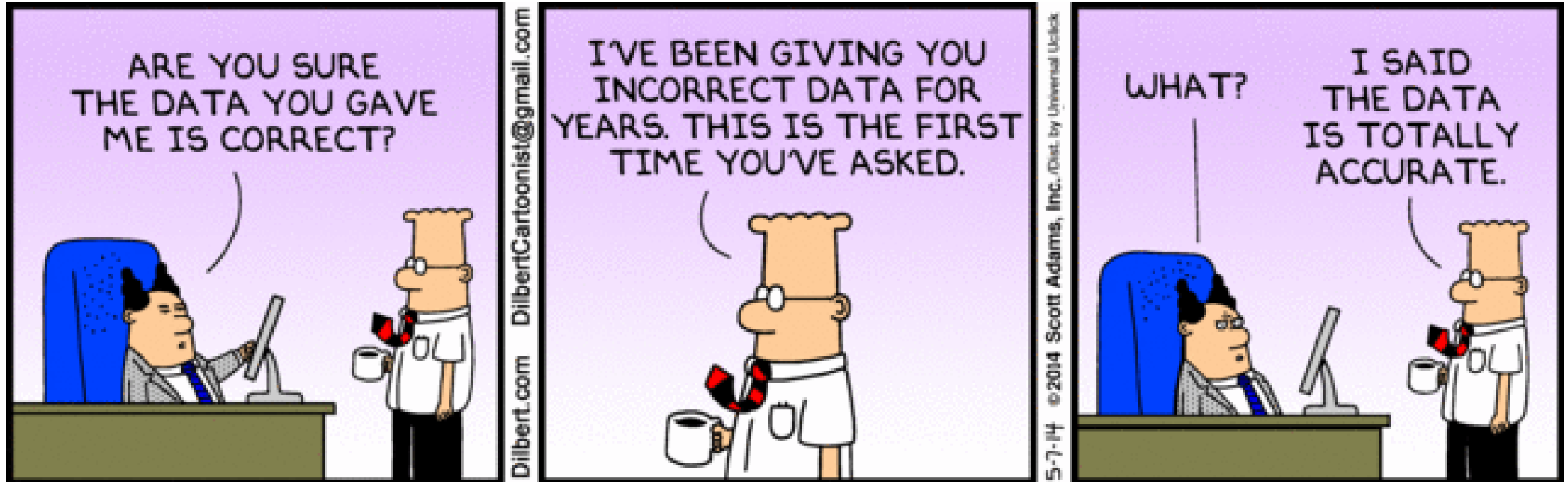


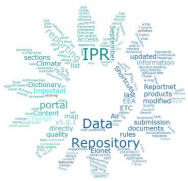


## 2 Quality checks



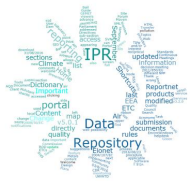
## 2 Quality checks



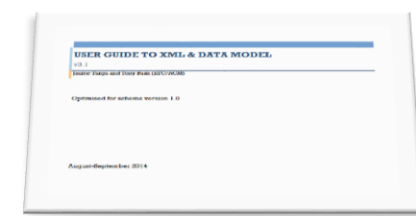


# QA/QC

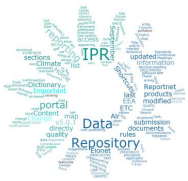
- B-G check introduced for September
- B-G improvements for 2020
- Update on H-K



# On-going improvements on QA



- Continue to ensure QA works 100%
- Improvements on small bugs on cross-checks



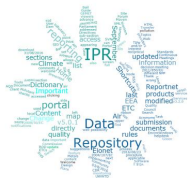
# Improvement on B (just developed)

- Sum of population

<http://dd.eionet.europa.eu/vocabulary/aq/cdrqaqc/B11>

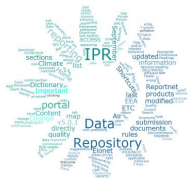
- Sum of area

<http://dd.eionet.europa.eu/vocabulary/aq/cdrqaqc/B12>



# Improvement on B (just developed)

B11		The sum of the population of different zones for expected combinations of Pollutant and ProtectionTarget must be within +/-5%				12 record found <a href="#">Hide records</a>	
		pollutant	protectionTarget	PopulationSum	Status	PopulationDD-5	PopulationDD+5
1			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
7			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
8			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
5			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
6001			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	0	...	547437	605061
10			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
20			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
5012			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
5018			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
5014			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
5015			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061
5029			http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	613894	Fail	547437	605061



# Improvement on B (just developed)

B12

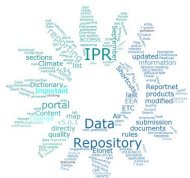
The sum of the area (km2) of different zones for expected combinations of Pollutant and ProtectionTarget must be within +/-5%

12 record found [Hide records](#)

pollutant	protectionTarget	Area	Status	AreaDD-5	AreaDD+5
1	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
7	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
8	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
5	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
6001	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	0	...	2456.7	2715.3
10	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
20	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
5012	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
5018	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
5014	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
5015	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3
5029	http://dd.eionet.europa.eu/vocabulary/aq/protectiontarget/H	2586.4	OK	2456.7	2715.3



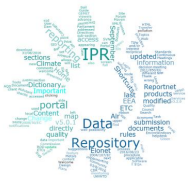




# Improvement on C (implemented)

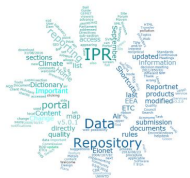
- In Assessment Regime (C)
  - Compare Assessment Regime with Preliminary

C03a	Number of Assessment Regimes in C should match Assessment Regimes in Preliminary C (for the same YEAR). <a href="#">i</a>	23 Assessment Regime missing found <a href="#">Show Records</a>
C03b	Number of Assessment Methods used under Assessment Regimes should be the same as Preliminary Assessment Regime (for the same YEAR). <a href="#">i</a>	Missing Assessment Methods <a href="#">Show Records</a>
C03c	Check if, for matching methods, the AssessmentType has changed the assessmentTypes <a href="#">i</a>	Mismatches of assessment type found <a href="#">Show Records</a>
C03d	List new assessment methods in C compared to C preliminary <a href="#">i</a>	236 New Assessment Methods found <a href="#">Show Records</a>

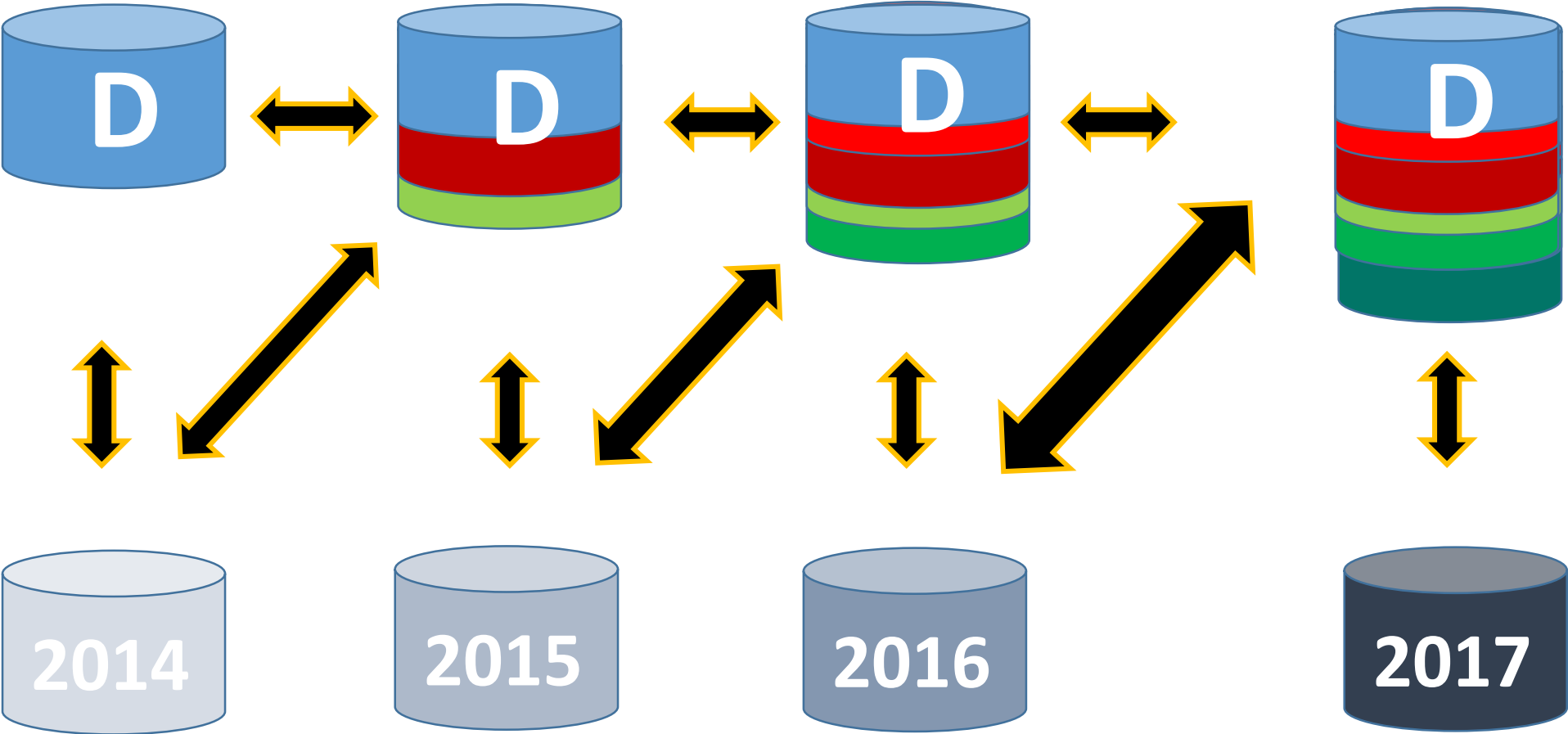


# Improvement on D (Implemented 2019)

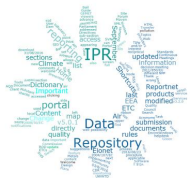
- Improvements on dataflow D to ensure full reporting (compared to previous deliveries)
- MUST ENSURE CONTINUITY IN DATAFLOW D



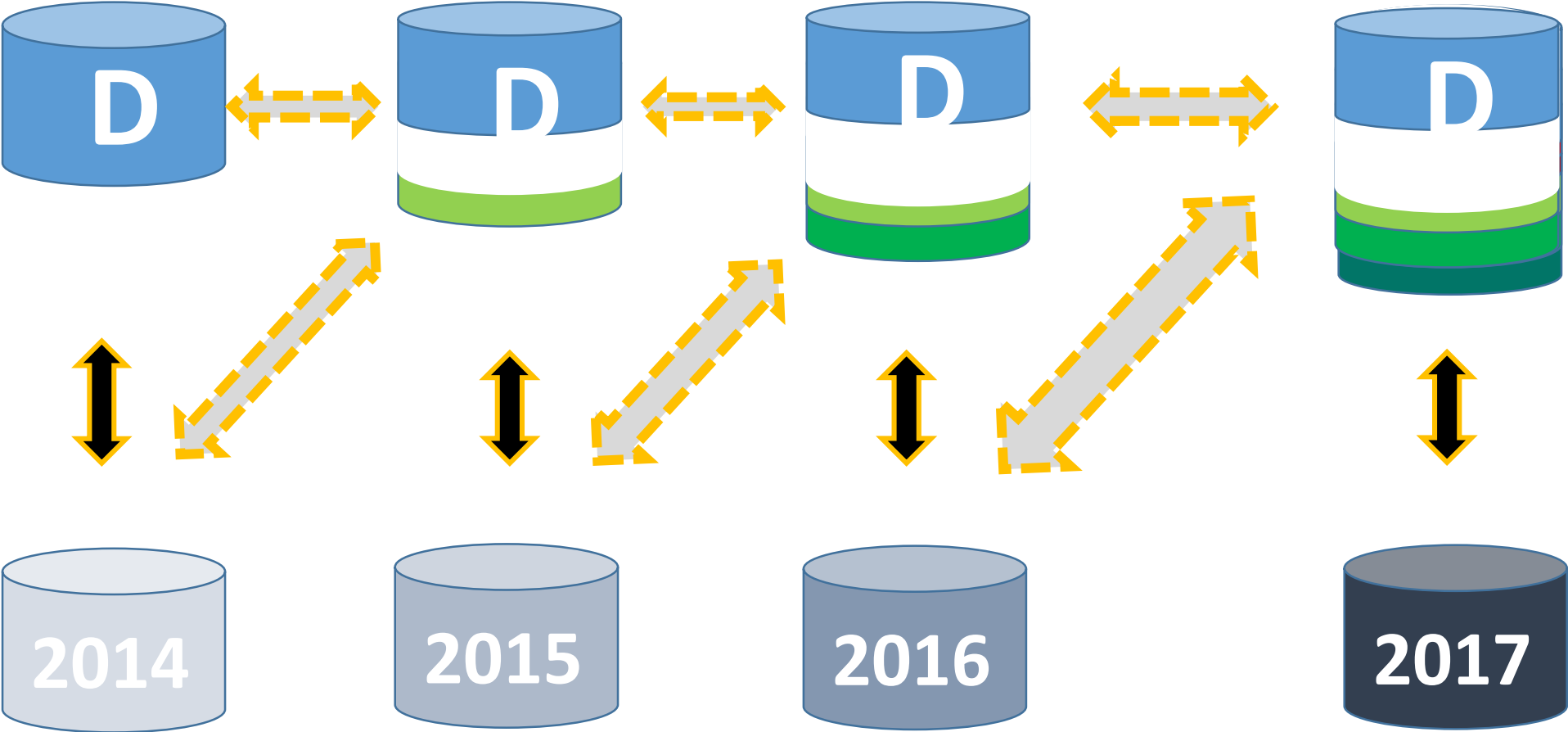
# Improvement on D - CORRECT



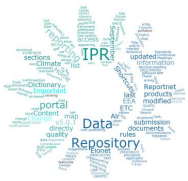
E1a



# Improvement on D

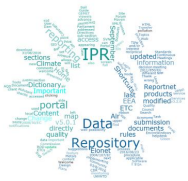


E1a



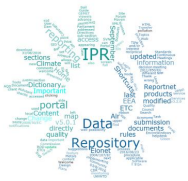
# Improvement on D (implemented 2019)

- Improvements on dataflow D to ensure full reporting (compared to previous deliveries)
- Cross-check between element (ef:supercedes) and samplingPoint id



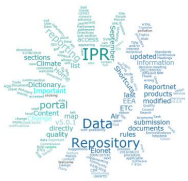
# Improve on E1a (implemented 2019)

- Automatic QA attempts to catch errors/bugs before processing data (on-going improvements)
- Pollutant ranges (minimum & maximum) merged into one check
  - 1<sup>st</sup> we check if we have a country specific range  
<http://dd.eionet.europa.eu/vocabulary/aq/primaryObservationRange/>
  - If not, we use general ranges  
<http://dd.eionet.europa.eu/vocabulary/aq/primaryObservationRange/>



# Improvement on E1a (to be implemented )

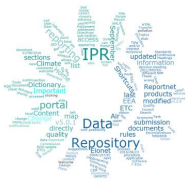
- Improvement on E34 is needed for low values (pending)
- SamplingPoint D & E1a
  - On-going
  - Improvements if EEA-ETC/ACM identify issues during aggregation & processing



# Improvement on D1b & E1b (to be implemented )

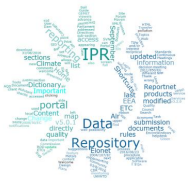
- E1b check to fully link to D1b
  - Please submit models/objects via D1b
- Possible new checks as E1b are processed
  - Projections might need to go into codelist
  - ...





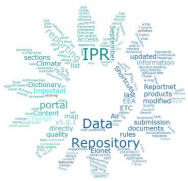
# Improvements on G

- G89 (implemented)
  - Check that E1a & E1b data has been submitted according to latest C (G89)
  - G89 might become an Error or Blocker in 2020
  - Questions?
    - If station is closed, should it still be used for Ozone 3 years and 5 years aggregations?
    - If station is closed, should it still be used for AEI?



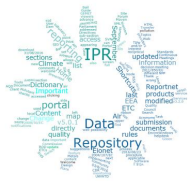
# Update on H-K

- EEA & ETC/ATNI identified checks for H-K
- H-K checks uploaded at <https://dd.eionet.europa.eu/vocabulary/aq/cdrqaqc/view>
- Work has been delayed

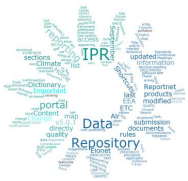


# Update on H-K

- Bug fixes on H released in August
- Some improvements on I-K also in August
- Final bugs/improvements released this week



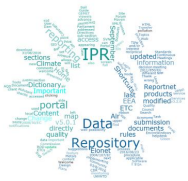
Thank you for your attention!



### 3 New recommendation and procedure for H-K data flows submission

#### General H-K submission policy

- By 31 December YY, the EU MS must report under Decision 2011/850/EU for YY-2
  - air quality plans (dataflow H)
  - source apportionment (dataflow I)
  - scenarios for the attainment year (dataflow J)
  - measure (dataflow K)
- If necessary, **resubmission** of updated details can be done throughout the following years.
- Unless the MS has developed its own IPR compliant system for H-K, the information for these dataflows will be transmitted in xml files generated by the [AQ Plans & Programmes e-reporting](#) tool (PaPeRS) developed by JRC and available at the [AQ Portal](#)

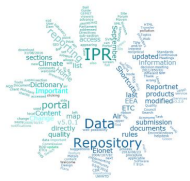


### 3 New recommendation and procedure for H-K data flows submission

#### H-K submission policy

submit all files in one envelope!

- Open a new envelope
- Upload all xmls
- Check that the envelope contains all files.
- Please note that, in order to make the upload less onerous you can zip your files in advance (locally) & upload one zip file to the CDR, which will be automatically decompress it for you after upload.

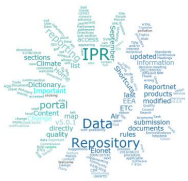


### 3 New recommendation and procedure for H-K data flows submission

#### H-K resubmission policy

re-submit all files in one envelope if any changes occur!

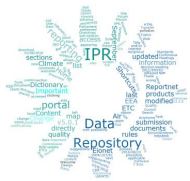
- Open a new envelope
- Set the envelope properties e.g. replicate those of the original envelope
- Upload unchanged xmls
- Upload changed xmls
- Check that the new envelope contains exactly the same number of files. Unchanged files must have the same localIds as the originals, corrected files may contain the same localIds and additional localIds
- Please note that, in order to make the upload less onerous you can zip your files in advance (locally) & upload one zip file to the CDR, which will automatically decompress it for you after upload.



### 3 New recommendation and procedure for H-K data flows submission

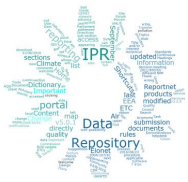
- reasons for such rules (QC, data management, data analysis)
  - make the harvesting procedure easy
  - not to create problems when MS want to remove wrong entities/elements from previous submissions
- recommendation for this year (2019 submission)
- mandatory for next year (2020)
  - blockers in the AQ e-reporting quality checks





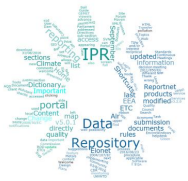
Thank you for your attention!





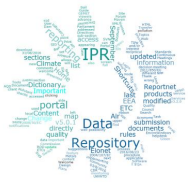
## 4 Reporting on models & objective estimation

- Recap on reporting models & objective estimation information
- How to report model & objective estimation methods & data
  - ➔ It's not the same as fixed & indicative measurements
  - ➔ Describing your method / technique
  - ➔ Reporting your observed / predicted data
  - ➔ Revised framework of model configuration flags
- Plans for handling multiple file formats
- Examples

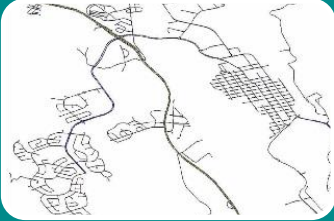


# Recap on using models & objective estimation

- Modelled & objective estimation are forms of supplementary assessment data as set out by
  - ➔ Articles 6, 7 and 10 of 2008/50/EC
  - ➔ Article 4 of 2004/107/EC
- Guidelines on usage
  - ➔ To supplement high quality fixed measurements
  - ➔ To improve the spatial coverage of assessments
  - ➔ Use as a sole source of information when levels are generally lower & can be assessed using methods with a greater uncertainty budget
  - ➔ To support AQ Plans preparation e.g. source apportionment & evaluation scenarios

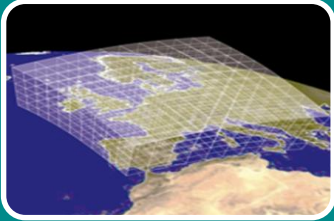


# Model & objective estimation types



## Predictions along a vector / trajectories

- Roads
- Railways
- Rivers



## Predictions on a regular / irregular grid

- Raster / gridded data
- Receptor locations



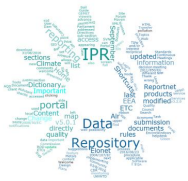
## Predictions at a point / polygon

- Receptor modelling
- Hot spot modelling



## Expert judgement

- Historical trends & emissions inventory analysis
- Shared / combined measurement time-series
- NS & WSS contributions

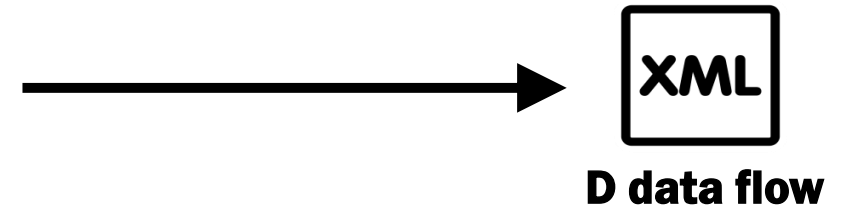


# Reporting model & objective estimation data

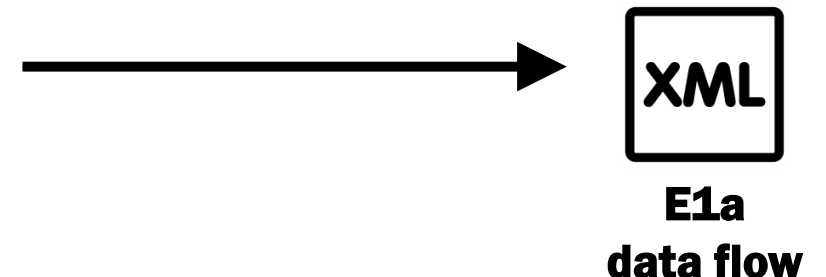
- If you are reporting models or objective estimation **PLEASE DO NOT** report in the D & E1a data flows, these data flows are reserved for fixed & indicative measurements

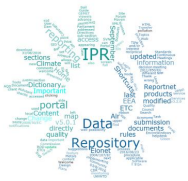


Description of assessment method / metadata delivered in D



Modelled & objective estimation observational data / predictions delivered in E1a



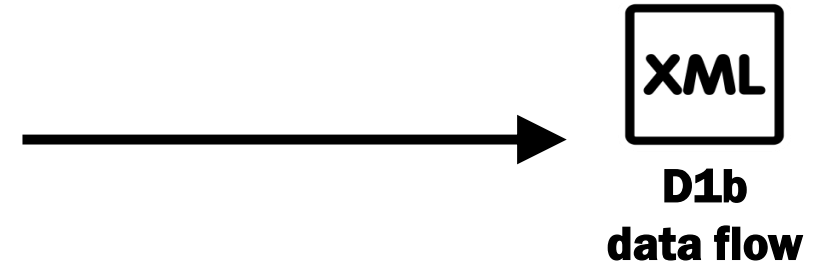


# Reporting model & objective estimation data

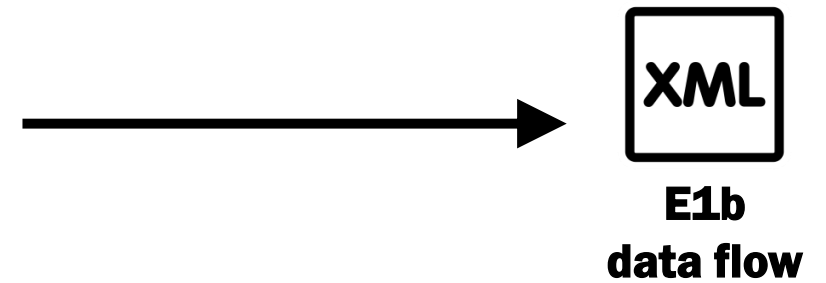
- If you are reporting models or objective estimation i.e. anything **other than** fixed or indicative measurements, you must report with the framework below

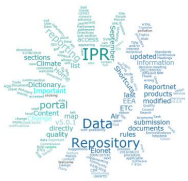


Description of assessment method / metadata delivered in D1b



Modelled & objective estimation observational data / predictions delivered in E1b





# New guidelines for reporting & benefits

## D1b provides a high-level description of how the model has been configured

- Emissions inventory used
- Meteorology used
- Chemistry used
- Interpolation technique used etc.

- ✓ **D1b can be static**
- ✓ **Reusable for many years**
- ✓ **Less updating for countries**

## E1b provides the actual configuration information & results

- Emissions inventory version
- Meteorology year
- Chemistry scheme
- Interpolation technique e.g. bilinear
- Data encoding & data formats

- ✓ **Parameters that will change the results, travel with the results**
- ✓ **E1b is by definition dynamic & generally needs updating each year**



# Example model configuration - emissions



## D1b declaration

- `<ompr:processParameter>`
  - `<ompr:ProcessParameter>`
    - `<ompr:name xlink:href="http://dd.eionet.europa.eu/vocabulary/aq/modelparameter/emissions"/>`
    - `<ompr:description>` The emissions inventory used to configure the model including as appropriate the year, version and summary of post processing
  - `required</ompr:description>`
- `</ompr:ProcessParameter>`
- `</ompr:processParameter>`



## E1b definition

```
<om:parameter>
  <om:NameValue>
    <om:name xlink:href="http://dd.eionet.europa.eu/vocabulary/aq/modelparameter/emissions"/>
    <om:value> NAEI2011 data, scaled forward to 2012 by linear interpolation between 2011 and projected
                (UEP45) 2012 data </om:value>
  </om:NameValue>
</om:parameter>
```

# Example model configuration - meteorology



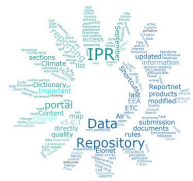
## D1b declaration

- `<ompr:processParameter>`
  - `<ompr:ProcessParameter>`
    - `<ompr:name xlink:href="http://dd.eionet.europa.eu/vocabulary/aq/modelparameter/meteorology"/>`
    - `<ompr:description>`A description of the meteorological dataset used to configure the model including name, year, version and citation (as appropriate)`</ompr:description>`
- `</ompr:ProcessParameter>`
- `</ompr:processParameter>`

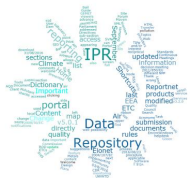


## E1b definition

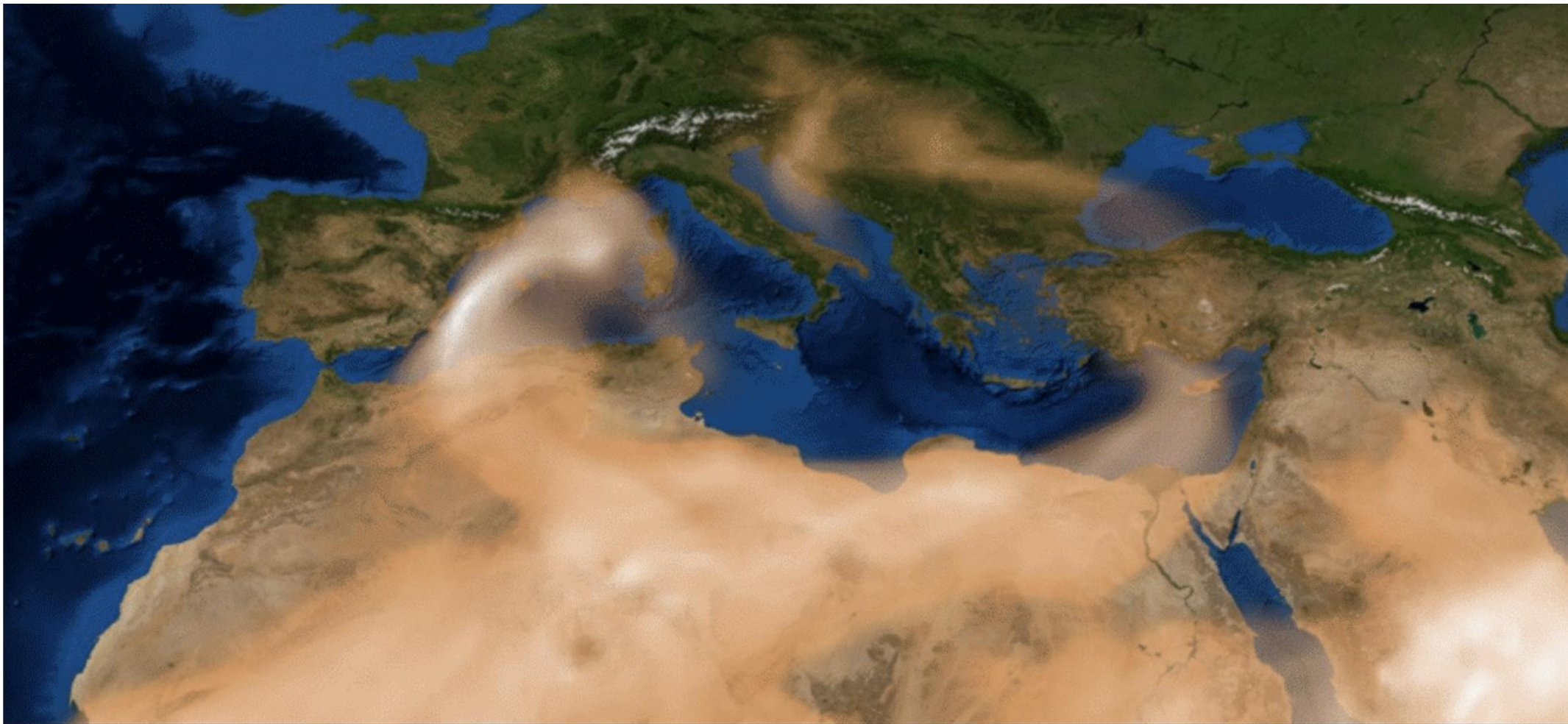
- `<om:parameter>`
  - `<om:NameValue>`
    - `<om:name xlink:href="http://dd.eionet.europa.eu/vocabulary/aq/modelparameter/emissions"/>`
    - `<om:value>` Waddington met station for 2012 (data acquired from the Met Office). Other met sites may be used for more detailed modelling studies where the national scale modelling/monitoring highlights potential problems`</om:value>`
  - `</om:NameValue>`
- `</om:parameter>`

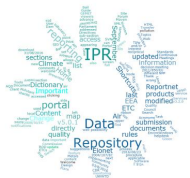


Thank you for your attention!



## 5 Reporting correction of natural sources

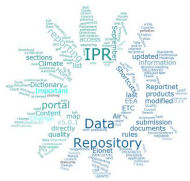




## 5 Reporting correction of natural sources

### Discussion

- Under TIPR5 we already presented how to report correction  
Is anyone following that guidance?
- Should we report corrected data?
- Is it sufficient to provide information in G?



Thank you for your attention!