|  |
| --- |
| **CDDA version 14 (2016)** |

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# Background & Introduction

The present document describes the activities and procedures for verification of the CDDA version 14 (2016).

## CDDA

The Nationally designated areas inventory (CDDA) is an [Eionet core data flow](https://www.eionet.europa.eu/dataflows) and holds information about protected areas and the national legislative instruments, which directly or indirectly create protected areas. The dataset contains data on individual nationally designated sites and designations in EEA member and collaborating countries.

## Definition of terms

Before going into further detail on the QA/QC process of the CDDA database, please consider the following definitions of important terms and key activities of the process. These reflect the terminology used within the present report.

Table 1‑1 Definition of terms

|  |  |
| --- | --- |
| **Validation / Quality control (QC)** | Validation is the process by which the accuracy and consistency of products are evaluated and the associated uncertainties are quantified (Justice et al., 2000).  Product *accuracy* is assessed by a comparison with independent data sources such as ground-based measurements, more detailed data or well-calibrated models.  Inter-comparison with other equivalent products is also part of the validation process allowing building up a community reference product when no or not enough independent data are available.  Quality control, or QC for short, is normally carried out after the end of the production and aims at providing the user with measurable / quantitative information how well the product meets the pre-defined specifications. |
| **Verification / Quality assurance (QA)** | The act of reviewing, inspecting, testing, checking, auditing, or otherwise establishing and documenting whether items, processes, services, or documents conform to specified requirements.  Verification is a qualitative process in which intermediate or final results of the production process are commented and potential deviations from the specifications are highlighted. The verification will be performed during the course of production and is meant to increase data and production quality.  Quality Assurance (QA) is a way of preventing mistakes or defects in products and avoiding problems when delivering solutions or services to customers.  QA is applied to physical products in pre-production to verify what will be made meets specifications and requirements, and during manufacturing production by validating whether lot samples meet specified quality controls.  QA is also applied to software to verify that features and functionality meet business objectives, and that code is relatively bug free prior to shipping or releasing new software products and versions. |

The QA/QC process described in the current report is a verification process, as the output does not provide quantitative results about the database quality and is used an element of a process to correct and improve the latest integrated European database version.

# Delivery of datasets

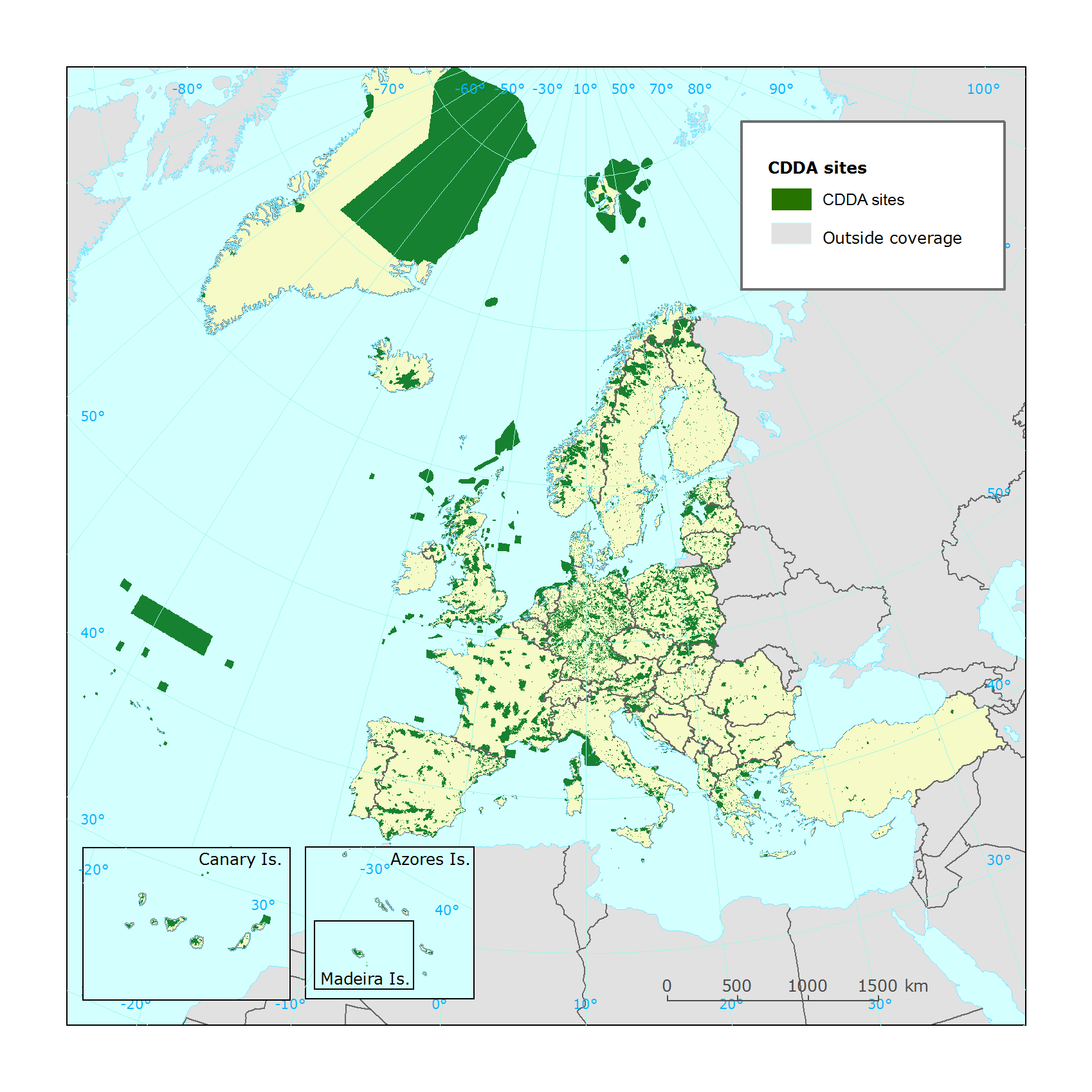
The following tabular and spatial European datasets have been uploaded to: <https://svn.eionet.europa.eu/repositories/Workdata/CDDA/cdda_ver14/>

## The CDDA v14 delivery

The latest version of the CDDA, version 14 from 2016, covers the entire geographical area of the 33 EEA member countries and its six cooperating countries. It includes the full geographical area under the responsibility of European countries as well as other States and Territories related to key initiatives in the European region.

The resulting data covers the 39 countries as well as Greenland (Denmark) and the French Overseas Departments and Territories and Overseas Collectives (Map 2-1, French DOMs not shown).

Map 2-1 Extent of the CDDA dataset (DOM/TOMs are not shown here)



35 countries delivered new tabular and spatial data in 2016, which had to be included into version 14 of CDDA. The four countries BA, CY, LI and LT did not deliver any data.

All datasets were subjected to a series of quality assurance (QA) checks. Once the data passed these tests it was combined with data from those countries which did not submit data in 2016. For these particular countries data was extracted from the previous CDDA dataset, version 13.

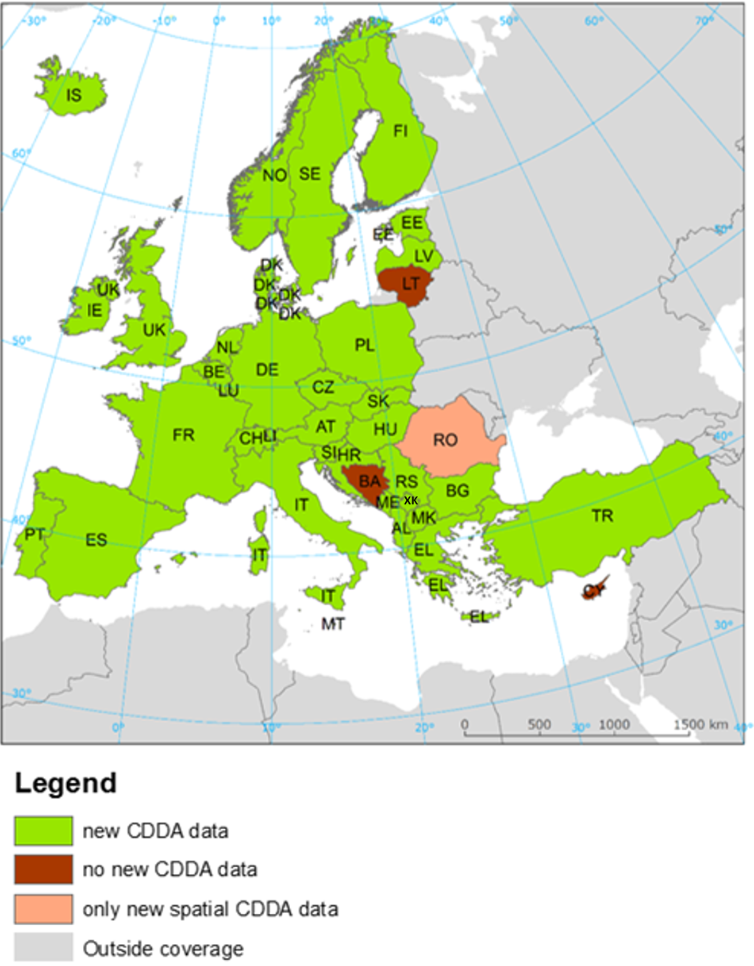
The combined and integrated dataset (i.e. 2016 CDDA, version 14) covers 39 countries, and consists of a total of **101 736** records in the tabular database and **99 004** spatial records.

Table 2-2‑1 Number of tabular and spatial records in the different CDDA versions

|  |  |  |
| --- | --- | --- |
| **CDDA version** | **tabular** | **Spatial** |
| **Version 2016 v\_14** | 101 736 | 99 004 |
| **Version 2015 v\_13** | 100 181 | 97 752 |
| **Version 2014 v\_12** | 98 367 | 95 109 |

The following map presents the countries, which provided data for the CDDA version 14.

**Map 2‑1 Countries that delivered data in 2016**



A more detailed overview is given in the following table. The cells marked with yellow show countries which did not deliver data for various reasons (e.g. no new national CDDA). Cells coloured in light blue represent country deliveries which did not contain new data for the corresponding reporting. In these cases where no changes in the datasets where reported or proposed by the country the datasets from the previous reporting (all version 12, 2014) have been used.

**Table 2‑2 Data deliveries and data updates for CDDA version 13 & 14, respectively (tabular & spatial)**

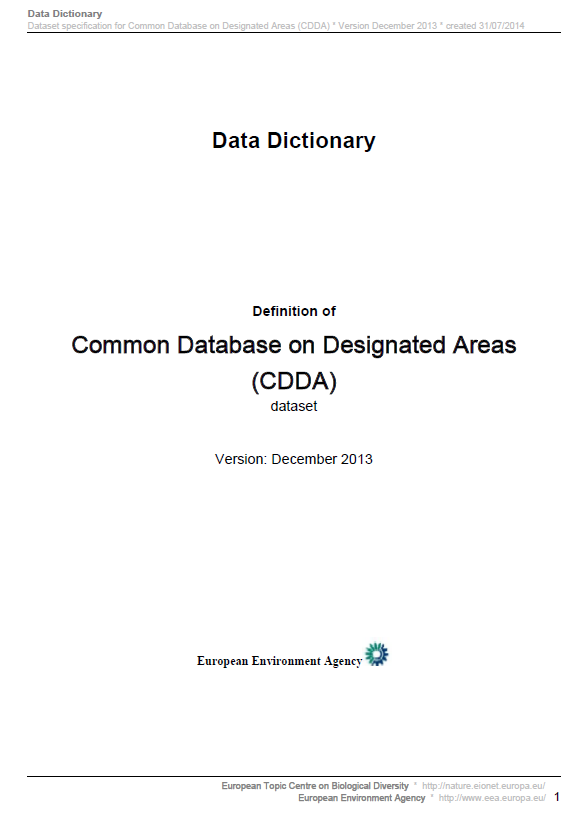
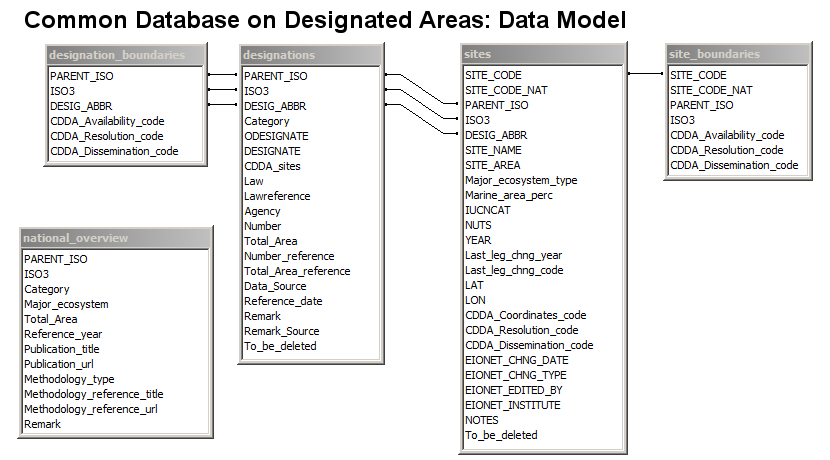
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **ISO - 2 digit** | **ISO - 3 digit** | **Version 13** | **Version 14** |
| **2015** | **2016** |
| Albania | AL | ALB | no new data | yes |
| Austria | AT | AUT | yes | yes |
| Bosnia - Herzegovina | BA | BIH | no | no |
| Belgium | BE | BEL | yes | yes |
| Bulgaria | BG | BGR | yes | yes |
| Switzerland | CH | CHE | yes | yes |
| Czech Republic | CZ | CZE | yes | yes |
| Cyprus | CY | CYP | no new data | no |
| Germany | DE | DEU | yes | yes |
| Denmark | DK | DNK | no | yes |
| Estonia | EE | EST | yes | yes |
| Spain | ES | ESP | yes | yes |
| Finland | FI | FIN | yes | yes |
| France | FR | FRA | yes | yes |
| Greece | GR | GRC | yes | yes |
| Croatia | HR | HRV | yes | yes |
| Hungary | HU | HUN | no new data | yes |
| Ireland | IE | IRL | yes | yes |
| Iceland | IS | ISL | yes | yes |
| Italy | IT | ITA | yes | yes |
| Liechtenstein | LI | LIE | no new data | no |
| Lithuania | LT | LTU | no | no |
| Luxembourg | LU | LUX | yes | yes |
| Latvia | LV | LVA | yes | yes |
| FYROM | MK | MKD | yes | yes |
| Malta | MT | MLT | yes | yes |
| Montenegro | ME | MNE | yes | yes |
| Netherlands | NL | NLD | yes | yes |
| Norway | NO | NOR | yes | yes |
| Poland | PL | POL | yes | yes |
| Portugal | PT | PRT | yes | yes |
| Romania | RO | ROU | yes | yes |
| Serbia | RS | SRB | yes | yes |
| Sweden | SE | SWE | yes | yes |
| Slovakia | SK | SVK | yes | yes |
| Slovenia | SI | SVN | yes | yes |
| Turkey | TR | TUR | yes | yes |
| United Kingdom | UK | GBR | yes | yes |
| Kosovo (UNSCR 1244/99) | XK | XKX | yes | yes |

The national CDDA data was delivered as tabular and spatial dataset.

**Tabular data:**

EEA provides the different national institutes with an MS-Access CDDA template database and technical specifications via the [Central data repository](http://cdr.eionet.europa.eu) (CDR: http://cdr.eionet.europa.eu).

Figure 2‑1 CDDA MS-Access data model & technical specification document



Using the template and the specification the countries update the table with the national CDDA information. After the national update, the database is uploaded again to the CDR.

**Spatial boundary data:**

Next to the tabular data the countries are asked to update their spatial CDDA data and to upload the data to the CDR.

# European CDDA dataset production

The final CDDA v14 dataset is the union of all single national tabular databases & spatial datasets.

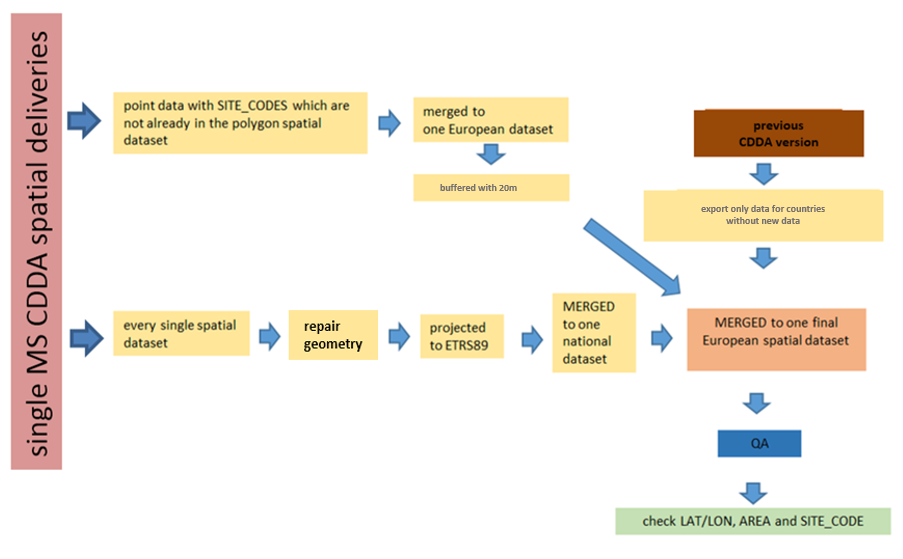
**TABULAR:**

After passing quality checks without errors, the single country tables were imported to a new MS-Access database.

**SPATIAL:**

Once the data deliveries passed the quality check without errors, the individual national vector data files were merged to one national spatial dataset. In a next step, all merged spatial datasets were used for the construction of the final European CDDA dataset.

Figure 3‑1 Workflow spatial map production



# Verification

The spatial and tabular data were checked by ETC/BD at different points during the CDDA v14 production workflow. First, the single country deliveries were checked for completeness. Subsequently, different QA tests of the single deliveries were performed by EEA and ETC/BD.

Once the spatial and tabular checks were complete the single datasets were merged to one European spatial and one tabular dataset. This final CDDA dataset was checked by EEA before publication.

## Verification overview

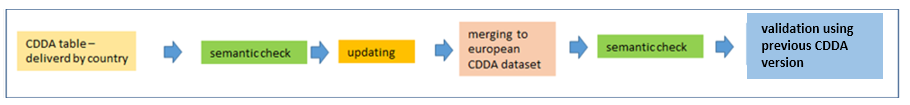
Tabular and spatial data were checked using different QA methods:

**Tabular:**

The countries uploaded the national CDDA v14 MS-Access versions on the CDR. An automatic QA, which is integrated in the database, performed semantic checks of the different tables. Errors were analysed and corrected. If necessary, e.g. where information was missing, the countries were requested to update the data.

After a successful quality check of the deliveries, the single tables were imported to the CDDA-v14 database template (provided by the EEA). Afterwards final QA checks were conducted using the integrated QA tool.

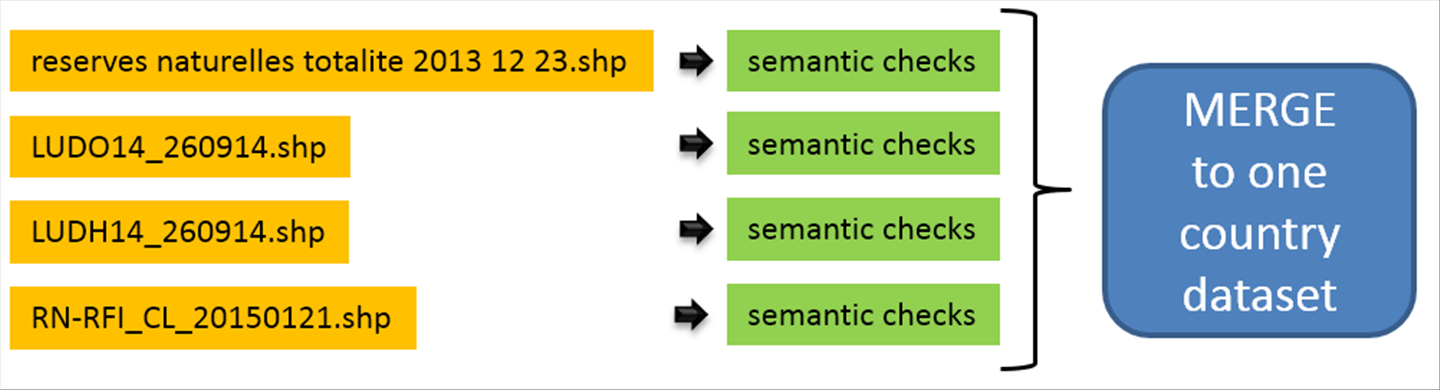
Figure 4‑1 Tabular data verification overview, version 13



**Spatial:**

The countries delivered various kinds and quantities of spatial data. Some countries delivered one polygon vector file, others more than 2 different polygon and point vector files.

Figure 4‑2 Example: spatial delivery by one country

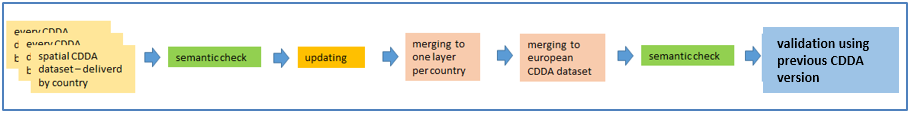


Therefore the first step of the verification was to check each spatial dataset prior to merging to one national dataset.

After the data passed the semantic check (projection, format, …) without errors, all data was merged into one European CDDA dataset in a file-geodatabase. If a country did not deliver new data, the most recent data available to the EEA was imported.

If spatial data was delivered as point dataset the points were buffered using a 20m buffer and merged with the polygon layer. With this operation the final spatial dataset only consisted of polygon vector layers.

Figure 4‑3 Spatial data verification overview for version 14



## Verification steps tabular data

The verification of the tabular data was done following the specifications provided in the CDDA call (<https://www.eionet.europa.eu/news/cdda2016>).

The automatic QA checks following data quality indicators:

* check that all the relevant fields are filled out correctly (compare field type, name & content with the [specifications](http://dd.eionet.europa.eu/datasets/3155))
* check for duplicates in SITE\_CODE
* check that the dissemination codes in the ‘sites’ and ‘site\_boundaries’ tables are the same
* if countries have officially asked for the calculation of coordinates this should be conducted by the ETC/BD.
* check that all coordinates are located in the country
* check coordinates of marine sites are located in marine regions
* check coordinates of terrestrial sites are located in terrestrial regions

Most of the checks listed above are executed by running an automatic FME (Feature Manipulation Engine – Software, using EEA common workspace) script on each of the separate national deliveries. The script loads the relevant database entries from the tabular database as well as the attributes and geometries from the spatial component to perform the checks. Within different sub-steps, information such as the number of sites, potential double-assigned site codes or the comparison between the number of tabular and spatial sites is derived and checked. The QA results for each separate country are recorded in a separate database, which contains information on all encountered inconsistencies identified during the checks.

## Verification steps spatial data

In the following chapter the verification of the spatial data will be explained.

Most countries that submitted spatial data in the 2016 delivered shape files. Only a few exemptions used another form of delivery such as sqlite-databases or a WFS (which is so far not compliant with the CDDA specifications).

The spatial validation consisted of the following stages:

* Projection validation
* Geometry validation
  + Geometry must be valid - if not repair geometry.
  + Singlepart polygons with same SITE\_CODE are not allowed – if this is the case: dissolve features by SITE\_CODE
* Geographical and Attribute validation
  + Data must lie within the country extent (terrestrial + marine).
  + Attribute validation, check that each feature has a SITE\_CODE, if not link by another field, if not possible check site name and try to link using site name, grid coordinates, area
  + Calculate coordinates for each polygon and compare them to the coordinates as supplied by country. (The coordinates of the centroid of each CDDA site in LAT/LON;WGS84)
  + Comparison of the Area, area calculated using GIS and compared to that supplied by the Country.

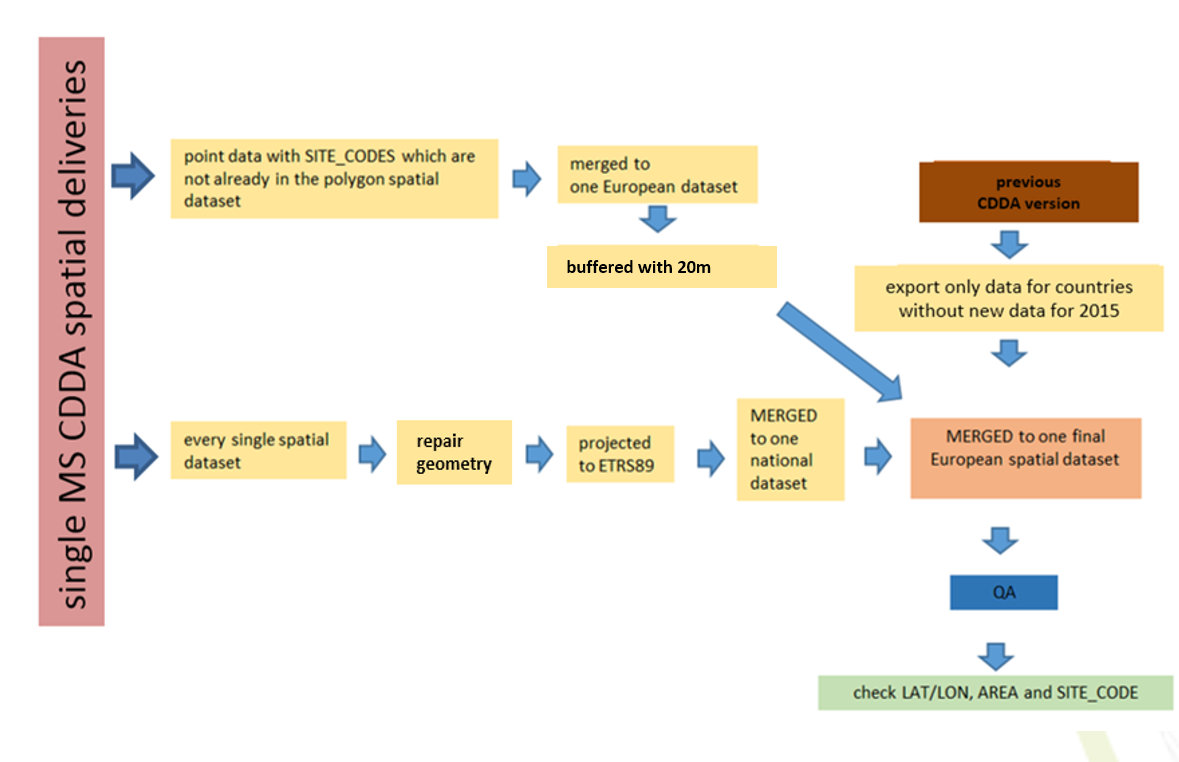
Also for the QA of the spatial CDDA data FME scripts were used which were stored on the common workspace.

## European CDDA layer production and verification

Once the spatial and tabular checks were complete, the single datasets were merged to one European spatial and one tabular dataset.

If sites are represented in form of a spatial point layer, the single points were buffered by 20m to form polygons and added to the polygon data sets. Subsequently, all single files were merged to one spatial CDDA dataset in File-Geodatabase format by ETC/BD and uploaded to the EEA SVN server. Finally, the uploaded CDDA dataset was checked by EEA before publication.

Figure 4‑4 Workflow: merging single spatial datasets (point & polygons)



# QA

In this chapter a selection of information and results about the new CDDA dataset will be presented.

## Semantic check

In the following table a selection of comments on the single CDDA deliveries are presented.

Table 5-1 *Selection* of semantic check results and information

| Country | **ISO3** | **Comment** |
| --- | --- | --- |
| Albania | ALB | * no national site codes defined * for some marine-terrestrial sites the marine percentage is missing |
| Austria | AUT | * double use of a site code |
| Bosnia - Herzegovina | BIH | * no data was uploaded |
| Belgium | BEL | * no comments |
| Bulgaria | BGR | * no comments |
| Switzerland | CHE | * national site codes used instead of European site code * reintroduction of site already deleted before |
| Cyprus | CYP | * no data was uploaded |
| Czech Republic | CZE | * no comments |
| Germany | DEU | * 933 sites shows a site area differing for more than 1ha from the previous CDDA version |
| Denmark | DNK | * spatial site without corresponding tabular information * table is not named correctly * missing SITE\_CODE\_NAT * some double SITE CODES found * Marine area percentage not filled for marine-terrestrial sites |
| Estonia | EST | * 2 shapefiles were merged with buffered point layer |
| Spain | ESP | * no comments |
| Finland | FIN | * no comments |
| France | FRA | * the designation categories “B” and “C” are not included in the “national overview table” |
| Greece | GRC | * the marine percentage values are not correct 🡪 some values are larger 100% |
| Croatia | HRV | * no comments |
| Hungary | HUN | * small geometric shift between the spatial datasets CDDA\_v14 and CDDA\_v13 |
| Ireland | IRL | * no comments |
| Iceland | ISL | * no comments |
| Italy | ITA | * designation boundaries are delivered in EPSG-projection 4258 * site area defined as 0 although spatial boundaries have been reported stating an area >0 ha |
| Liechtenstein | LIE | * no data was uploaded |
| Lithuania | LTU | * no data was uploaded |
| Luxembourg | LUX | * no comments |
| Latvia | LVA | * no comments |
| FYROM | MKD | * some LAT/LON values are missing |
| Malta | MLT | * in the “site boundary –table “ for one site the boundary information is missing |
| Montenegro | MNE | * one site was delivered only spatially – no corresponding tabular information found |
| Netherlands | NLD | * more than on spatial dataset was delivered for the protected sites * wrong projection |
| Norway | NOR | * Multipart polygons representing same site have been reported separately 🡪 multiple use of same site code |
| Poland | POL | * no comments |
| Portugal | PRT | * no comments |
| Romania | ROU | * spatial data was downloaded from Romania map service (WFS) as GML file * the spatial dataset do not correspond to the CDDA specifications * no tabular data was uploaded to CDR 🡪 no automatic quality assurance checks have been performed on the envelope * as no new tabular data has been uploaded inconsistencies identified in previous version still persist |
| Serbia | SRB | * one site was only delivered spatially – no corresponding tabular information found * some shifts between previous and current spatial version identified |
| Sweden | SWE | * no comments |
| Slovakia | SVK | * in the “designations table the designation ”SK13” marked “no CDDA sites” but used for one site |
| Slovenia | SVN | * no comments |
| Turkey | TUR | * spatial data has been delivered in four separate datasets * site code information are missing for multiple sites * major ecosystem information are missing for all sites * double use of site code |
| United Kingdom | GBR | * some shifts between previous and current spatial version identified * major ecosystem information for some sites are missing * relevant information in the “national overview table” are missing * coordinates for multiple sites missing |
| Kosovo (UNSCR 1244/99) | XKK | * wrong xml file format were uploaded to CDR * in the “designations table the designation ”XK07” marked “no CDDA sites” but used for one site * multiple use of single site code |

## Comparison of the new CDDA with the previous version

Another output of the semantic checks is the comparison of the site count as well as the site area between the new spatial CDDA version and the previous version 13 from 2015.

Table 5-2 CDDA site count comparison: CDDA\_v13 vs CDDA\_v14 (spatial datasets)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Country** | **count 2015** | **count 2016** | **Difference** | **Difference** | **INFO** |
| **2016-2015** | **2016-2015 [%points]** |
| Albania | 54 | 54 | 0 | 0,0 | no changes |
| Austria | 1199 | 1199 | 0 | 0,0 | no changes |
| Bosnia - Herzegovina | 33 | 33 | 0 | 0,0 | no new data |
| Belgium | 1396 | 1421 | 25 | 1,8 | increase |
| Bulgaria | 1015 | 1014 | -1 | -0,1 | decrease |
| Switzerland | 5884 | 5890 | 6 | 0,1 | increase |
| Czech Republic | 2552 | 2594 | 42 | 1,6 | increase |
| Cyprus | 16 | 16 | 0 | 0,0 | no new data |
| Germany | 17289 | 17423 | 134 | 0,8 | increase |
| Denmark | 1923 | 1929 | 6 | 0,3 | increase |
| Estonia | 11618 | 11693 | 75 | 0,6 | increase |
| Spain | 1580 | 1783 | 203 | 12,8 | increase |
| Finland | 11719 | 12102 | 383 | 3,3 | increase |
| France | 2973 | 2994 | 21 | 0,7 | increase |
| Greece | 799 | 803 | 4 | 0,5 | increase |
| Croatia | 416 | 408 | -8 | -1,9 | decrease |
| Hungary | 218 | 307 | 89 | 40,8 | increase |
| Ireland | 309 | 309 | 0 | 0,0 | no changes |
| Iceland | 114 | 114 | 0 | 0,0 | no changes |
| Italy | 871 | 871 | 0 | 0,0 | no changes |
| Liechtenstein | 41 | 41 | 0 | 0,0 | no new data |
| Lithuania | 360 | 360 | 0 | 0,0 | no new data |
| Luxembourg | 104 | 113 | 9 | 8,7 | increase |
| Latvia | 707 | 707 | 0 | 0,0 | no changes |
| Macedonia, Replublic of | 75 | 75 | 0 | 0,0 | no changes |
| Malta | 203 | 204 | 1 | 0,5 | increase |
| Montenegro | 4 | 4 | 0 | 0,0 | no changes |
| Netherlands | 250 | 251 | 1 | 0,4 | increase |
| Norway | 2896 | 2941 | 45 | 1,6 | increase |
| Poland | 2017 | 2027 | 10 | 0,5 | increase |
| Portugal | 220 | 221 | 1 | 0,5 | increase |
| Romania | 866 | 943 | 77 | 8,9 | increase |
| Serbia | 185 | 312 | 127 | 68,6 | increase |
| Sweden | 14111 | 14456 | 345 | 2,4 | increase |
| Slovakia | 1172 | 1174 | 2 | 0,2 | increase |
| Slovenia | 2046 | 2046 | 0 | 0,0 | no changes |
| Turkey | 1225 | 839 | -386 | -31,5 | decrease |
| United Kingdom | 9274 | 9298 | 24 | 0,3 | increase |
| Kosovo (UNSCR 1244/99) | 29 | 35 | 6 | 20,7 | increase |

The tabular database contains more CDDA sites than the spatial dataset. Therefore the area statistic based on the tabular dataset varies from the area statistic based on the spatial data (not shown):

Table 5‑3 CDDA area comparison: CDDA\_v13 vs CDDA\_v14 (tabular datasets)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Country** | **PARENT\_ISO** | **AREA [km²] 2015** | **AREA [km²] 2016** | **Difference 2016-2015** | **Difference 2016-2015 [%pts]** | **INFO** |
| Albania | ALB | 4648 | 4648 | 0 | 0,00 | no changes |
| Austria | AUT | 26312 | 26312 | 0 | 0,00 | no changes |
| Belgium | BEL | 8340 | 8394 | 54 | 0,65 | increase |
| BosniaHerzegovina | BIH | 391 | 391 | 0 | 0,00 | no new data |
| Bulgaria | BGR | 15158 | 15169 | 11 | 0,07 | increase |
| Croatia | HRV | 8078 | 8064 | -13 | -0,17 | decrease |
| Cyprus | CYP | 3789 | 3789 | 0 | 0,00 | no changes |
| Czech Republic | CZE | 13178 | 13690 | 512 | 3,88 | increase |
| Denmark | DNK | 995884 | 996448 | 564 | 0,06 | increase |
| Estonia | EST | 23716 | 23811 | 95 | 0,40 | increase |
| Finland | FIN | 35322 | 35529 | 207 | 0,59 | increase |
| France | FRA | 299801 | 304694 | 4893 | 1,63 | increase |
| Germany | DEU | 133801 | 144209 |  |  |  |
| Greece | GRC | 38130 | 38103 | -28 | -0,07 | decrease |
| Hungary | HUN | 11319 | 14194 | 2875 | 25,40 | increase |
| Iceland | ISL | 20089 | 20089 | 0 | 0,00 | no changes |
| Ireland | IRL | 2006 | 2006 | 0 | 0,00 | no changes |
| Italy | ITA | 60227 | 60227 | 0 | 0,00 | no changes |
| Kosovo | XKX | 1241 | 1300 | 59 | 4,78 | increase |
| Latvia | LVA | 16856 | 16851 | -5 | -0,03 | decrease |
| Liechtenstein | LIE | 82 | 82 | 0 | 0,00 | no new data |
| Lithuania | LTU | 10933 | 10933 | 0 | 0,00 | no new data |
| Luxembourg | LUX | 1279 | 1520 | 241 | 18,87 | increase |
| Macedonia, | MKD | 2297 | 2297 | 0 | 0,00 | no changes |
| Malta | MLT | 340 | 343 | 2 | 0,73 | increase |
| Montenegro | MNE | 1314 | 1314 | 0 | 0,03 | increase |
| Netherlands | NLD | 12800 | 12862 | 62 | 0,49 | increase |
| Norway | NOR | 182332 | 182582 | 250 | 0,14 | increase |
| Poland | POL | 103886 | 103837 | -49 | -0,05 | decrease |
| Portugal | PRT | 121884 | 121990 | 106 | 0,09 | increase |
| Romania | ROU | 20354 | 20328 | -26 | -0,13 | decrease |
| Serbia | SRB | 5727 | 5520 | -208 | -3,62 | decrease |
| Slovakia | SVK | 12224 | 12225 | 1 | 0,01 | increase |
| Slovenia | SVN | 28109 | 28104 | -6 | -0,02 | decrease |
| Spain | ESP | 79682 | 102179 | 22497 | 28,23 | increase |
| Sweden | SWE | 57964 | 58271 | 308 | 0,53 | increase |
| Switzerland | CHE | 3479 | 3485 | 6 | 0,17 | increase |
| Turkey | TUR | 111538 | 111546 | 8 | 0,01 | increase |
| United Kingdom | GBR | 162741 | 173640 | 10900 | 6,70 | increase |

The total tabular CDDA area increased from 2 637 251 km² to 2 824 777 km² between versions 13 and 14. **That´s an increase of 187 526 km²**.

## Major ecosystem information

One important CDDA information is the “Major ecosystem type” - <http://dd.eionet.europa.eu/dataelements/69878>. For every CDDA site the major ecosystem type: marine, marine-terrestrial or terrestrial should be specified.

The following table shows the overview of delivered major ecosystem type information by country.

Table 5‑2 Major ecosystem type information by country [count of sites]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Country** | PARENT\_ISO | **no type info** | **Marine** | **Marine/terrestrial** | **Terrestrial** |
| Albania | ALB | 798 | 0 | 0 | 0 |
| Austria | AUT | 0 | 0 | 0 | 1217 |
| Belgium | BEL | 0 | 2 | 15 | 1665 |
| Bulgaria | BGR | 0 | 1 | 3 | 1039 |
| Bosnia -Herzegovina | BIH | 156 | 0 | 0 | 0 |
| Switzerland | CHE | 0 | 0 | 0 | 5891 |
| Cyprus | CYP | 45 | 0 | 0 | 0 |
| Czech Republic | CZE | 0 | 0 | 0 | 2552 |
| Germany | DEU | 206 | 4 | 4 | 17083 |
| Denmark | DNK | 0 | 0 | 5 | 2268 |
| Spain | ESP | 0 | 24 | 86 | 1470 |
| Estonia | EST | 0 | 23 | 324 | 11345 |
| Finland | FIN | 0 | 21 | 914 | 10784 |
| France | FRA | 0 | 29 | 32 | 2917 |
| United Kingdom | GBR | 5569 | 77 | 48 | 3580 |
| Greece | GRC | 0 | 3 | 40 | 799 |
| Croatia | HRV | 0 | 2 | 20 | 395 |
| Hungary | HUN | 0 | 0 | 0 | 279 |
| Ireland | IRL | 0 | 2 | 49 | 258 |
| Iceland | ISL | 115 | 0 | 0 | 0 |
| Italy | ITA | 0 | 33 | 5 | 833 |
| Liechtenstein | LIE | 41 | 0 | 0 | 0 |
| Lithuania | LTU | 0 | 2 | 2 | 356 |
| Luxembourg | LUX | 0 | 0 | 0 | 108 |
| Latvia | LVA | 0 | 7 | 0 | 700 |
| Macedonia | MKD | 0 | 0 | 0 | 86 |
| Malta | MLT | 0 | 5 | 0 | 198 |
| Montenegro | MNE | 0 | 0 | 0 | 72 |
| Netherlands | NLD | 0 | 4 | 3 | 244 |
| Norway | NOR | 0 | 3 | 950 | 1944 |
| Poland | POL | 0 | 0 | 15 | 2002 |
| Portugal | PRT | 0 | 43 | 15 | 162 |
| Romania | ROU | 0 | 1 | 1 | 949 |
| Serbia | SRB | 0 | 0 | 0 | 260 |
| Slovakia | SVK | 0 | 0 | 0 | 1214 |
| Slovenia | SVN | 0 | 6 | 15 | 2025 |
| Sweden | SWE | 0 | 1 | 791 | 13498 |
| Turkey | TUR | 1313 | 0 | 0 | 0 |
| Kosovo | XKX | 0 | 0 | 0 | 115 |

In the current CDDA version there are still 8 countries which did not deliver information on the major ecosystem type for any reported sites.

## IUCN management category information

Another important CDDA information is the IUCN management category of the site,

<http://dd.eionet.europa.eu/dataelements/74678>.

The following table shows the count of sites classified by their IUCN category.

Table 5‑3 IUCN management categories by country [count of sites]

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Country** | **Ia** | **Ib** | **II** | **III** | **IV** | **V** | **VI** | **NA** | **UA** | **NULL** |
| Albania | 2 |  | 15 | 749 | 23 | 5 | 4 |  |  |  |
| Austria | 3 | 4 | 9 | 212 | 641 | 344 | 3 |  | *1* |  |
| Belgium |  |  | 10 |  | 988 |  | 278 | *406* |  |  |
| Bulgaria | 55 |  | 3 | 349 | 35 | 11 | 562 | *28* |  |  |
| Bosnia - Herzegovina |  |  |  | 2 |  | 1 |  |  |  | 153 |
| Switzerland | 546 |  |  |  | 5345 |  |  |  |  |  |
| Cyprus | 1 | 1 | 14 | 6 | 17 | 3 | 3 |  |  |  |
| Czech Republic | 2 | 7 | 3 | 618 | 1885 | 37 |  |  |  |  |
| Germany |  |  | 16 |  | 8150 | 8505 |  |  |  | 626 |
| Denmark | 6 | 14 | 10 | 23 | 307 | 1616 |  | *297* |  |  |
| Spain | 10 | 61 | 97 | 259 | 176 | 311 | 43 | *623* |  |  |
| Estonia | 29 | 1221 |  | 1231 | 908 | 856 | 808 | *6639* |  |  |
| Finland | 20 | 123 | 38 | 2 | 394 | 3 | 15 | *11124* |  |  |
| France | 55 | 1 | 7 | 13 | 2832 | 68 |  |  | *2* |  |
| United Kingdom |  |  | 18 | 343 | 8549 | 107 |  | *198* | *59* |  |
| Greece | 10 |  | 25 | 71 | 622 | 4 | 73 | *37* |  |  |
| Croatia |  | 2 | 8 | 85 | 77 | 97 |  | *148* |  |  |
| Hungary |  |  | 5 |  | 156 | 57 |  | *61* |  |  |
| Ireland | 73 |  | 6 |  | 230 |  |  |  |  |  |
| Iceland | 2 | 2 | 5 | 46 | 19 | 28 | 13 |  |  |  |
| Italy | 116 |  | 24 | 55 | 491 | 185 |  |  |  |  |
| Liechtenstein |  | 9 |  |  | 31 | 1 |  |  |  |  |
| Lithuania | 6 |  | 5 |  | 287 | 32 | 30 |  |  |  |
| Luxembourg |  | 44 | 2 |  | 62 |  |  |  |  |  |
| Latvia |  | 4 | 45 | 355 | 293 | 10 |  |  |  |  |
| Macedonia | 2 |  | 3 | 67 | 12 | 1 | 1 |  |  |  |
| Malta | 9 | 75 | 7 | 53 | 19 | 1 | 1 | *38* |  |  |
| Montenegro | 7 |  | 5 | 54 |  | 5 |  |  | *1* |  |
| Netherlands |  |  | 20 |  | 231 |  |  |  |  |  |
| Norway | 2126 | 1 | 44 | 96 | 229 | 138 |  |  | *263* |  |
| Poland |  |  | 16 |  | 1435 | 121 |  |  | *445* |  |
| Portugal | 13 | 25 | 1 | 21 | 66 | 45 | 49 |  |  |  |
| Romania | 45 |  | 13 | 206 | 671 | 16 |  |  |  |  |
| Serbia | 3 | 1 | 2 | 80 | 29 | 26 | 2 | *117* |  |  |
| Slovakia | 350 | 23 | 8 | 326 | 406 | 15 |  | *86* |  |  |
| Slovenia | 6 | 50 | 1 | 1164 |  | 44 |  | *781* |  |  |
| Sweden | 2760 | 157 | 23 | 315 | 1245 | 302 |  | *9488* |  |  |
| Turkey |  |  |  |  |  |  |  |  | *1313* |  |
| Kosovo | 8 | 2 | 2 | 99 |  | 4 |  |  |  |  |

The tables shows that for the most sites IUCN category information is available. Only two countries delivered sites without any IUCN information (NULL).

## Designation boundaries

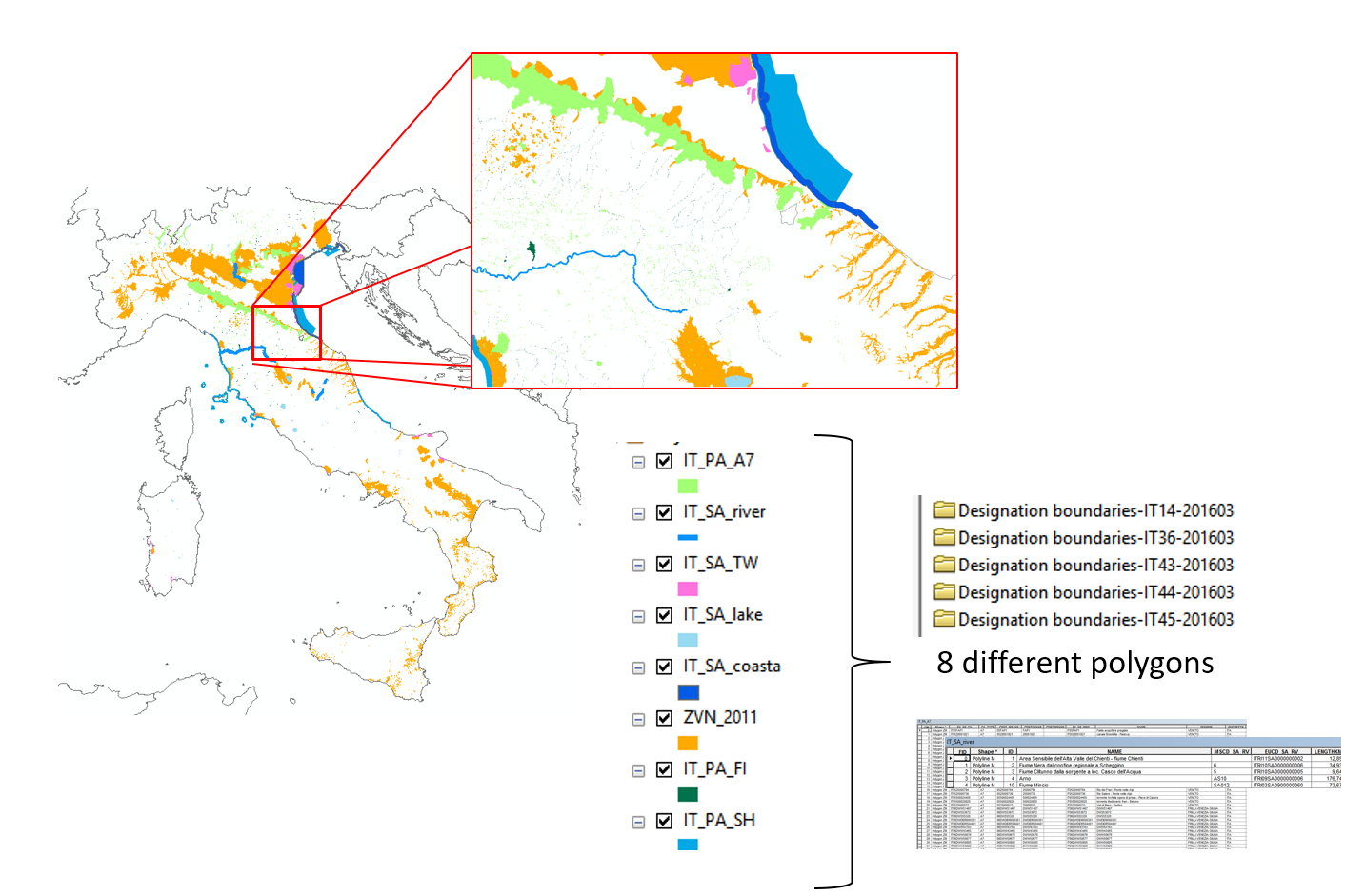
The designation boundaries concept is used for the reporting of areas protected by a designation type which does not create individual sites that can be identified by a SITE\_CODE. Designation boundaries are always reported as a spatial dataset

<http://dd.eionet.europa.eu/tables/9117>

Only Italy and Netherlands delivered designation boundaries.

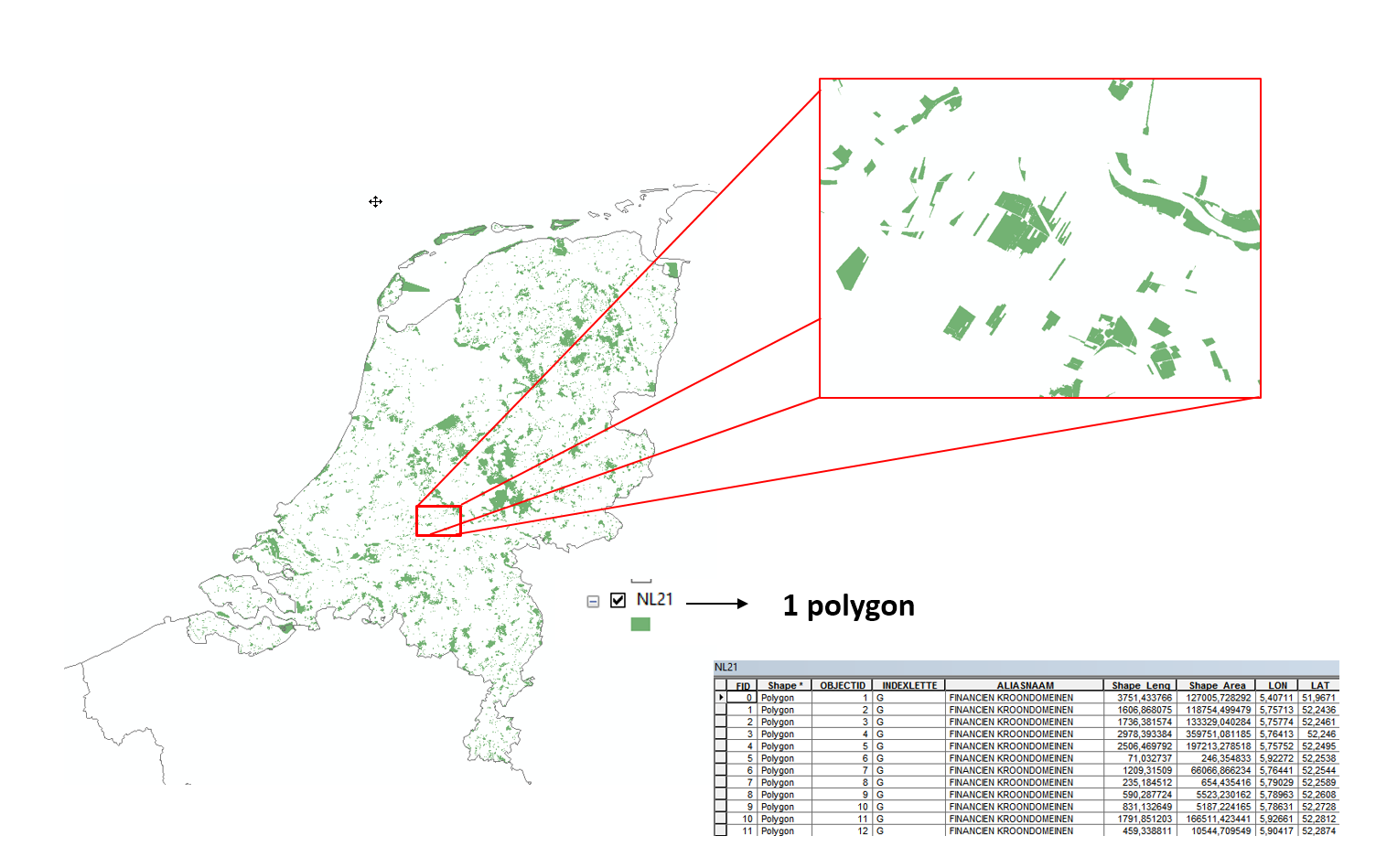
Italy delivered eight separate spatial datasets instead of one dataset combining all designation boundaries:

Figure 5‑1 Spatial designation boundary delivery from Italy



The Netherlands delivered one designation boundary dataset covering the designation type NL21.

Figure 5‑2 Designation boundary delivery from the Netherlands



# Concluding remarks

While the majority of the data delivered under the CDDA reporting cycle is of a high quality, there are still some problematic issues for data processing:

* wrong xml-file format or no xml-file uploaded to EIONET –> *no automatic QA possible*
* LAT/LON coordinates outside the country
* Unnecessary fields added to tabular/spatial dataset and/or different spelling of field names
* Many countries have delivered only tabular information to indicate the presence of designation boundaries, but where such a delivery is not accompanied by a spatial file the areas cannot be included under the designation boundaries concept. An improved description of the designation boundaries concept will be provided before the next CDDA reporting.
* Marine area percentages in some cases are not correct
* Spatial datasets reported in the wrong projection