

**Frontex/OP/403/2020/DT**

**FWC for map production services**

**Annex II**

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## 1. Background Information

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### 1.1. Information Fusion Centre and supporting IT systems

Frontex, the European Border and Coast Guard Agency, was established to assist both EU member states and other countries within the Schengen passport-free area in the management of their external borders and to bring greater consistency and harmonisation to the EU border control. The agency facilitates cooperation between border authorities by providing the necessary technical support and expertise available where and when it is needed. Frontex also promotes solidarity among the member states by coordinating assistance to those facing disproportionate pressures at their external borders.

Among Frontex' key tasks are risk analysis, vulnerability assessment and situation monitoring. The situation at the EU external borders and pre-frontier area is continuously monitored and analysed. For this purpose, multiple types of information are integrated, analysed and visualized into Frontex systems and applications.

The Information Fusion Centre (IFC), an entity within the Situational Awareness and Monitoring Division (SAM) in Frontex, is a provider of up-to-date, reliable and innovative information services in support of the SAM business units and partners. Its information services and capabilities are based on the fusion of a wide range of data amongst which geospatial data, vessel data and data from Frontex operational activities and provided to internal and external stakeholders via the EUROSUR Fusion Services.

The IT systems used to compile, maintain and analyse the different geographic sources of information are GIS centric built in ESRI technology stack and the information is displayed on top of background, static and dynamic, maps for analysis and situational awareness. The cartographic and infographic maps are produced in Frontex to support its main activities.

### 1.2. Map production

Information Fusion Centre produces approximately 20 cartographic (reference) maps in A0 size for different European areas throughout one year. This production implies around 20 copies of A0 posters each printed on glossy paper and/or technical paper. However, the number of requested cartographic and infographic maps is increasing and can be higher than indicated above.

This tender is a response to requirements collected from end users in Frontex to support the production of:

- Reference maps (Political, Topographic, Transportation, Economic, Geologic, Physical, Climate, etc.)
- Thematic maps (Migration, Crime, Nationalities, Operations, Search and Rescue, etc.)
- Infographic maps (imagery, charts, and text over a thematic map)
- Map books

The produced maps should be simple, avoiding any unnecessary information, with clear symbology, labelling and/or other map elements relevant to convey the proper message.

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## 2. Scope and deliverables

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The required output is a set of high resolution and high quality maps which can be used for analyses, visualization and presentation as well as wall display based on user requirements and targeting a specific audience in support of Frontex and its stakeholders.

The cartographic and infographic maps shall have the following general specifications depending on the type of map requested:

### 2.1. Types of maps

Based on user requirements, the map may be requested as Reference, Thematic, Infographic map, or a Map book.

#### 2.1.1. Reference maps

Maps that display administrative boundaries, place names and major physical features, such as roads, railroads, coastlines, rivers and lakes. Based on the user request the map may also display topographic, geological, utilities and or climate features.

#### 2.1.2. Thematic maps

Maps that display a spatial variability of theme or phenomena e.g. distribution of a crime, minorities by country, etc. The thematic maps also contain reference information as place names, major roads, major water bodies, or other reference information to familiarize the user with the geographic area displayed on the map.

#### 2.1.3. Infographic maps

Maps that combine text, charts diagrams and thematic maps in an effective way so user quickly understands the visual representation of information and data.

#### 2.1.4. Map book

Map book as a collection of pages printed or exported together, containing maps that can be reference mapping, thematic maps and infographic maps, other pages may be dedicated to text, tabular information, tables of contents, or title pages, as well as other content.

### 2.2. Scale

#### 2.2.1. Large-scale maps

To present high detailed information, these maps are drawn on a relatively very large scale, such as building scale (1:2 500); street scale (1:5 000); streets scale (1:10 000), neighbourhood scale (1:20 000), town scale (1:40 000), city scale (1:80 000), cities scale (1:160 000) and metropolitan area scale (1:320 000).

#### 2.2.2. Small scale maps

To present general information, these maps are drawn on a relatively small scale, such as Nomenclature of Territorial Units for Statistics (NUTS) or Administration level similar to NUTS 3 (1:750 000); NUTS 2 (1:1 500 000); NUTS 1 (1:3 000 000), or higher, country or countries scale (1:25 000 000) continent scale (1:50 000 000) and world scale (1:100 000 000).

### 2.3. Map elements

All maps types except indicated otherwise by the requestor should have the following elements:

### **2.3.1. Symbology**

As a general approach and unless otherwise indicated by users, symbols used in the map to display information must mimic the feature's form or portrait the information in a clear and easy way targeting the type of audience. Familiar symbols should be used for mapping the information. Frontex corporate visual identity symbols can and shall be used when requested and provided by Frontex.

### **2.3.2. Title**

The title must reflect the keyword to draw the attention of the user. The title should provide answers to "What? Where? When?"

### **2.3.3. Direction**

Used to show the directions of the map so that map readers can relate those directions to the real world. Can be defined by a compass rose or just North arrow that will indicate the orientation of the map and maintain a connection to the data frame. If data frame is rotated, the direction element rotates with it.

### **2.3.4. Legend**

The legend describes all unknown or unique map symbols and must show in detail any colour schemata, symbology or categorization displayed on the map.

### **2.3.5. Scale**

Scale can be in verbal, numeric, or graphic form. It shows the ratio of the map to ground measurement.

### **2.3.6. Labels**

Labels identify a location of features in the map by text. They can describe places (streets, rivers) with specific names or can be used to represent or highlight a certain feature.

### **2.3.7. Grid**

A grid represents a series of spaced horizontal and vertical lines running across the map to help users find locations on the map. It can be used to display measured locations using projected coordinates, location in geographic coordinates or to display multiple coordinate systems on the same map.

### **2.3.8. Citation**

Citation displays the metadata of the map as data sources, projection information and any caveats necessary to describe the map.

### **2.3.9. Frames**

Frames border the map elements and or the map itself. It can be used to link map elements to other parts of the map by using similar frames or to set map elements apart.

## **2.4. Geographic coordinate system**

Depending on the type of map, the scope of the map, audience and user requirements the geographic coordinate system shall be based on the most common used: World Geodetic System 1984 (WGS84), European Terrestrial Reference System 1989 (ETRS89), European Datum 1950 (ED50).

## **2.5. Map projection**

Depending on the type of map, the scope of the map, audience and user requirements, the map shall have a projected coordinate system based on a geographic coordinate system. Projection shall be (not exhaustive) of one of the following types:

### **2.5.1. Conformal**

Preserves the shape by preserving the individual angles describing the spatial relationships between the features displayed on the map.

### **2.5.2. Equal area**

Preserves the area of displayed features.

### **2.5.3. Equidistant**

Preserves the distances between point features.

### **2.5.4. Azimuthal**

Preserves some of the great circle arcs.

## **2.6. Page layout**

Page layout organizes the space and location of the map elements for printing.

### **2.6.1. Frontex Corporate Visual Identity**

Frontex corporate Visual identity elements, if requested to be displayed on the map will be provided by Frontex. These consist of logo, colour scheme and symbology. Regarding font types currently in use, they are either Fedra or Trebuchet MS Font Family. This may be a subject to change, but it is understood that the fronts will be requested from Microsoft Corporation list based on License Microsoft fonts. Other fronts may be used subject to prior working level agreement between Frontex and the contractor.

### **2.6.2. Orientation**

Page layouts can have either a landscape or a portrait orientation, depending on the user requirements or the design of the map adjust to the necessary map elements, projection, type of map, extent or scale.

### **2.6.3. Size**

Page size depends on user requirements, audience and type of map. The following sizes must be at least available: A4, A3, A2, A1, and A0, 2A0 and 4A0 dimensions of the A series paper sizes, as defined by the ISO 216 standard.

## **2.7. Delivery format**

Maps should be delivered in pdf and/or png and/or jpg format. Other formats may be subject to the prior working level agreement between Frontex and the contractor.

## **2.8. Printing**

The contractor may be requested to professionally print the map in the sizes described in 2.6.3 with orientation described in 2.6.2 and at least in the following general paper type: gloss or photo paper, technical paper, self-adhesive paper and transparent film as well as in the number of copies requested and/or as agreed between Frontex and the contractor.

## **2.9. User acceptance**

The map shall be considered finalized and delivered once the user signs the Deliverable Acceptance Form (Appendix 1).

## 2.10. Data

Depending on the type of map requested specific Frontex data might be required to be integrated in the map. In these cases Frontex will supply the data. The data will be supplied to the contractor in Esri format e.g. Shapefile and or File geodatabase.

## 2.11. No disclosure agreement

All information delivered by Frontex, including data and/or Frontex Corporate Visual Identity elements, are subject to a Declaration of Confidentiality signed by the Contractor.

## 2.12. Deliverable quality criteria

The tenderer must perform map quality control procedures before delivering the map, based on ISO standards. A quality map report must be provided jointly with the product delivery, having the minimum requirements:

	Quality requirements:
1)	Type of map meets the requirements describe in 2.1
2)	Map elements meets the requirements described in 2.3
3)	Map geographic coordination system meets the requirements as described 2.4
4)	Map projection meets the requirements as described in 2.5
5)	Map page layout meets the requirements described in 2.6
6)	Maps delivery format meets the requirements described in 2.7
7)	Maps printing meets the requirements described in 2.8

## 2.13. Support during contract implementation

The tenderer must provide a customer support for the duration of the contract implementation. The communication with customer support should be available via dedicated e-mail address and phone number, at least from Monday till Friday during working hours (from 9am till 5pm, Warsaw, Poland time).



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### 3. Acceptance Criteria

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The deliverables shall meet the following acceptance criteria:

- All deliverables must meet the deliverable quality criteria set in 2.12.

The acceptance for the deliverable shall be confirmed by Deliverable Acceptance Form signed by Frontex Project Manager (Appendix 1).

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## 4. Language

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All the communication and documentation, both in paper and electronic form and all the deliverables, shall be in English (U.K.) and shall adhere to a high standard appropriate for technical documentation, with no ambiguities and no mistakes in grammar or spelling.

All members of the Contractor's staff allocated to this contract shall speak and write in English at minimum level of B1, according to the Common European Framework of Reference for Languages.

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## 5. Ordering and Payments

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### 5.1. Ordering process

The FWC will be implemented through Order Forms throughout the validity of this FWC. Such Order Forms will be issued by Frontex on monthly or quarterly basis and they will indicate maximum amount of maps that will be requested during indicated period of time. After signature of the Order Form, maps will be subsequently requested by Frontex via dedicated email address provided by the Contractor. The individual requests for services will specify the requirements for each ordered products/services according to requirements defined in Chapter 2 herein.

## 6. Appendices

The following Appendix is included:

### Appendix 1 Deliverable Acceptance Form

#### Model of Task / Deliverable Acceptance Form

FOR ORDER FORM No .....

*Original document - duly signed - to be attached to the invoice*

**TASK / DELIVERABLE DESCRIPTION:**

**PROVISIONAL ACCEPTANCE:**

**TASK / DELIVERABLE is ACCEPTED / REJECTED:**

*To be filled in by Frontex:*

Official responsible for acceptance (in block capitals):	
Date and signature	
Official responsible for final validation (in block capitals):	
Date and signature	