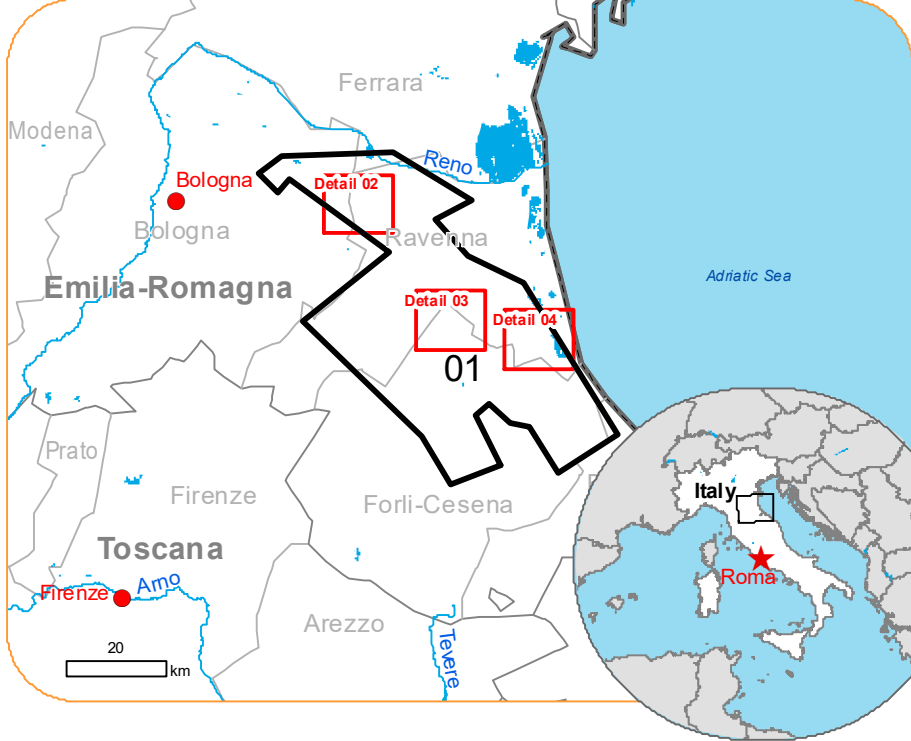




Situation as of 18/05/2023 16:55 UTC  
Delineation MONIT01 - Overview map 01



Previous flooded area  
8,797.6 ha  
Flooded area  
11,212.4 ha  
Potentially affected population  
~ 2100

Potentially Affected Built-up and Transportations  
Built-Up  
15.6 ha  
Road  
156.9 km  
Airport  
0.5 km  
3.1 ha

**Crisis Information**

- Flooded Area
- Previous Flooded Area (17/05/2023 16:56 - 17:14 UTC)

**General Information**

- Area of Interest
- Detail map
- Image Footprint
- Not Analysed

**Administrative boundaries**

- Province
- Municipality

**Placenames**

- Placename

**Built-Up Area**

- Residential
- Non residential
- School, university and research buildings
- Hospital or institutional care buildings

**Hydrography**

- River
- Stream
- Lake
- Land Subject to Inundation
- Reservoir
- River

**Facilities**

- Long-distance pipelines or lines
- Local pipelines or lines
- Mining or extraction site
- Water Well
- Power plant
- Sport and recreation constructions
- Dump Site
- Water or Aquatic infrastructure
- Dam

**Transportation**

- Highway
- Main road
- Local road
- Track
- Railway
- Airfield runway
- Airfield
- Helipad

All data displayed on the map(s), as well as the Land Use - Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data). All products and data are also available for download on the activation webpage.

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

**Data sources and analysis:** Pre-event image: Sentinel-2A/B (2021) (acquired on 06/08/2022 at 10:06 UTC, resolution 10.0 m). This image is used as background image.  
Post-event image: RADARSAT 2 Data and products © MacDonald, Dettwiler and Associates Ltd. (2023) (acquired on 18/05/2023 at 16:55 UTC, resolution 3.0 m) – RADARSAT is an official mark of the Canadian Space Agency. COSMO-SkyMed © ASI (2023), distributed by e-GEOS S.p.A. (acquired on 17/05/2023 at 16:56 UTC and 17:14 UTC, resolution 3.0 m). All images are provided under COPENICUS by the European Union and ESA, all rights reserved.

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Inset maps: JRC 2013, GISCO 2010 © EuroGeographics, Natural Earth 2012, CCM River DB © EUJRC2007, GeoNames 2015.

Population data: GHS Population Grid © European Commission, 2022  
https://ghsl.jrc.ec.europa.eu/ghs\_pop2022.php  
Digital Elevation Model: SRTM (90 m) or (30 m) (NASA/USGS).

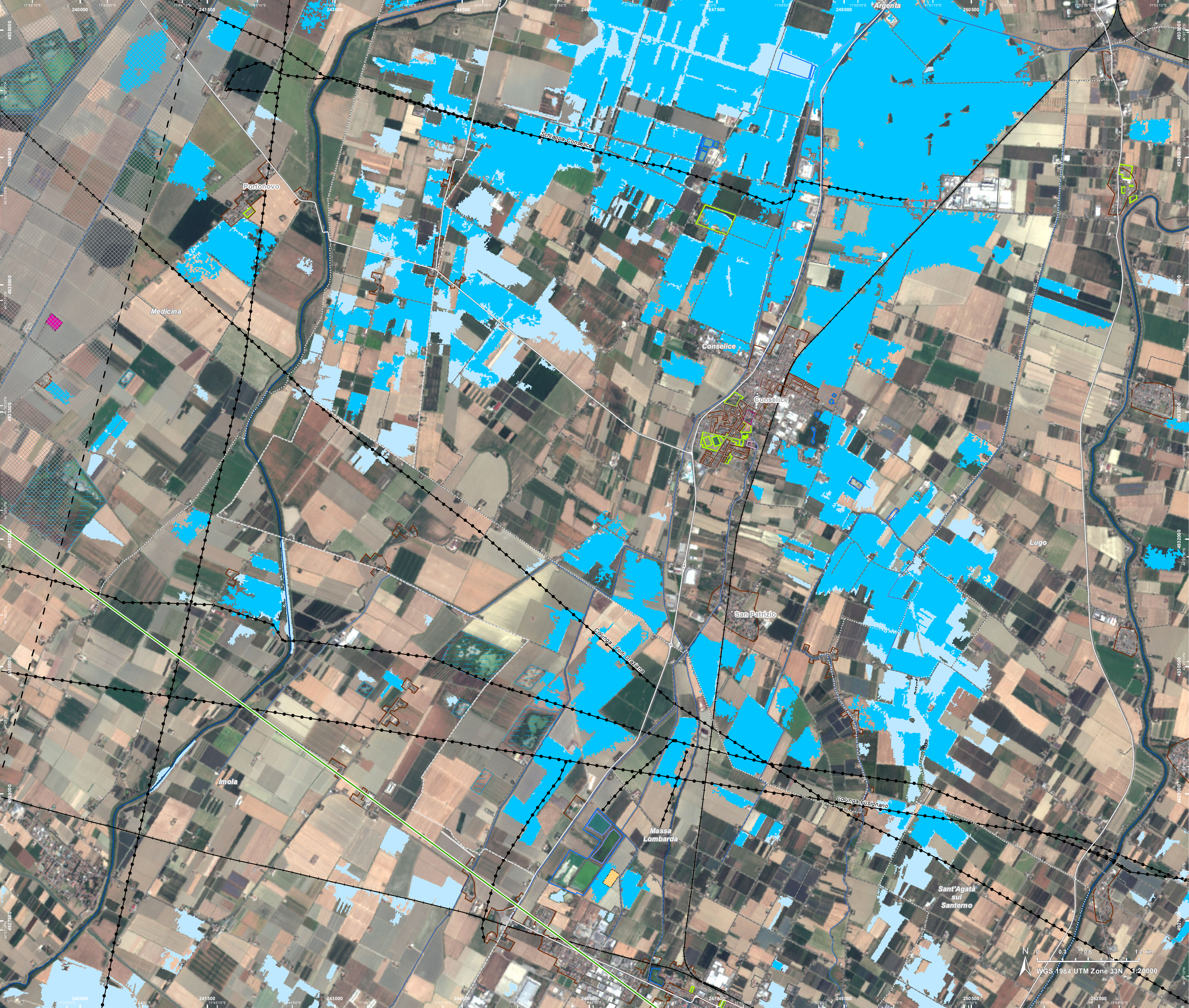
The thematic layer has been derived from post-event satellite image using a semi-automatic approach. Please be aware that the thematic accuracy might be lower in urban areas due to inherent limitations of the SAR analysis technique).  
The scale of analysis is 1:25000. The estimated geometric accuracy (RMSE) is 6.25 m or better, from native positional accuracy of the background satellite image. The minimum mapping unit (MMU) is 625 sq. m.

Map produced by e-GEOS released by e-GEOS on the 19/05/2023.

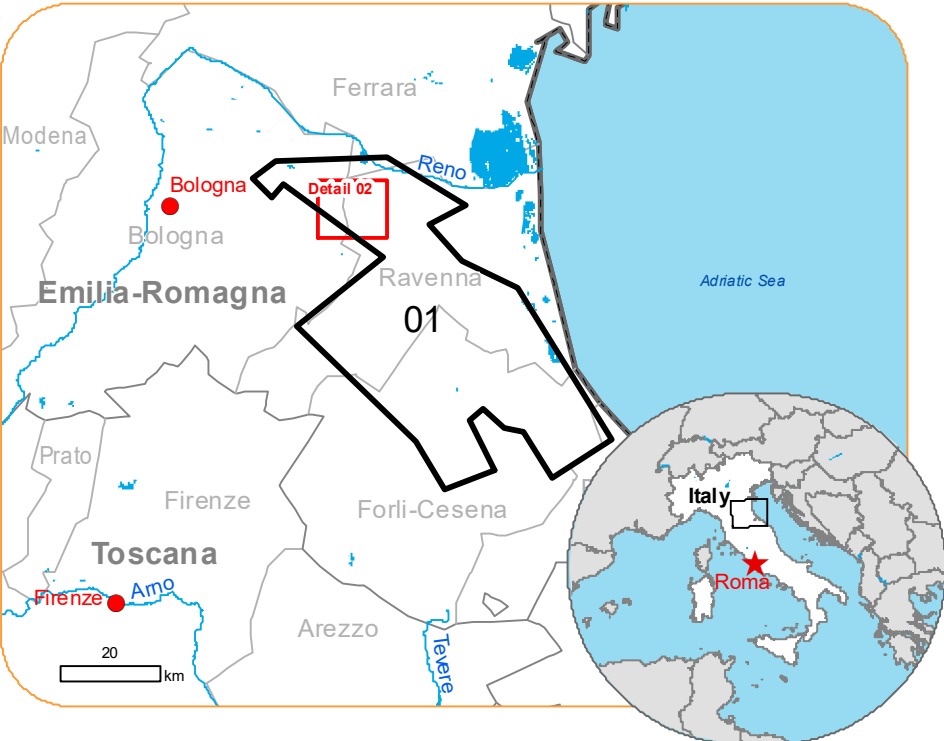
Details on this activation and service conditions available through the QR code or at the link:  
https://emergency.copernicus.eu/EMSR664







Situation as of 18/05/2023 16:55 UTC  
Delineation MONIT01 - Detail map 02



	Previous flooded area 1,979.6 ha 22.5 % of total in AOI		Potentially affected population ~ 300 14.3 % of total affected
	Flooded area 2,425.9 ha 21.6% of total in AOI		

Potentially Affected Built-up and Transportations

	Built-Up 1.6 ha 10.3% of total affected		Road 24.0 km 15.5 % of total affected
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<b>Crisis Information</b>	<b>Facilities</b>
Flooded Area	Long-distance pipelines or lines
Previous Flooded Area (17/05/2023 16:56 - 17:14 UTC)	Local pipelines or lines
<b>General Information</b>	Power plant
Area of Interest	Sport and recreation constructions
Image Footprint	Water or Aquatic infrastructure
Not Analysed	<b>Transportation</b>
<b>Administrative boundaries</b>	Main road
Province	Local road
Municipality	Track
<b>Placenames</b>	Railway
Placename	Airfield runway
<b>Built-Up Area</b>	All data displayed on the map(s), as well as the Land Use -Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data).
Residential	All products and data are also available for download on the activation webpage.
Non residential	
School, university and research buildings	
Hospital or institutional care buildings	
Military	
<b>Hydrography</b>	
River	
Stream	
Lake	
Land Subject to Inundation	
Reservoir	

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Voltre, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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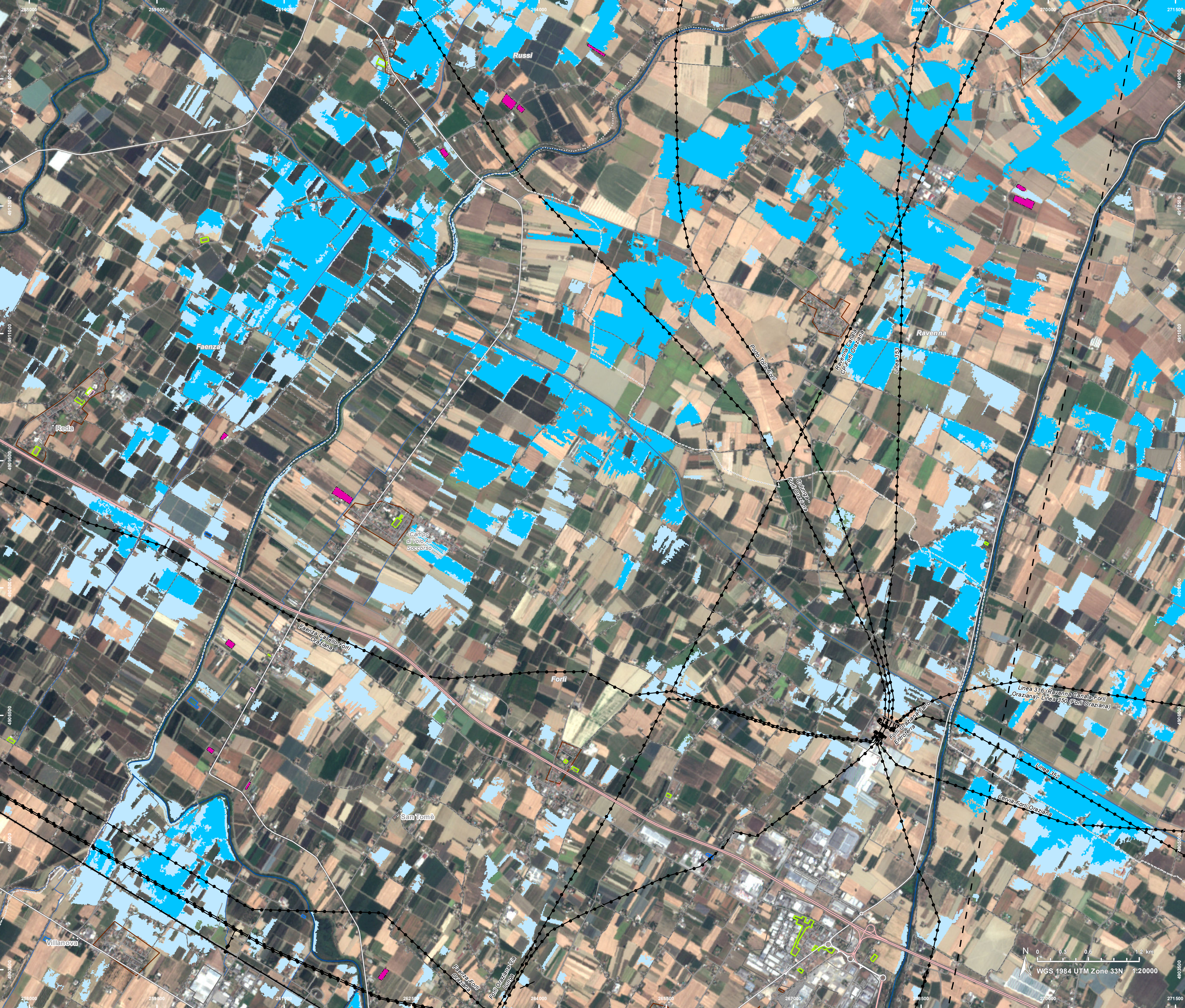
Base vector layers: OpenStreetMap © OpenStreetMap contributors (2023), Wikimapia.org, GeoNames 2015, Corine Land Cover (CLC) 2018, EuroBoundaryMap 2017 © EuroGeographics, refined by the producer.  
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Population data: GHS Population Grid © European Commission, 2022  
[https://ghsl.jrc.ec.europa.eu/ghs\\_pop2022.php](https://ghsl.jrc.ec.europa.eu/ghs_pop2022.php)  
Digital Elevation Model: SRTM (90 m) or (30 m) (NASA/USGS).

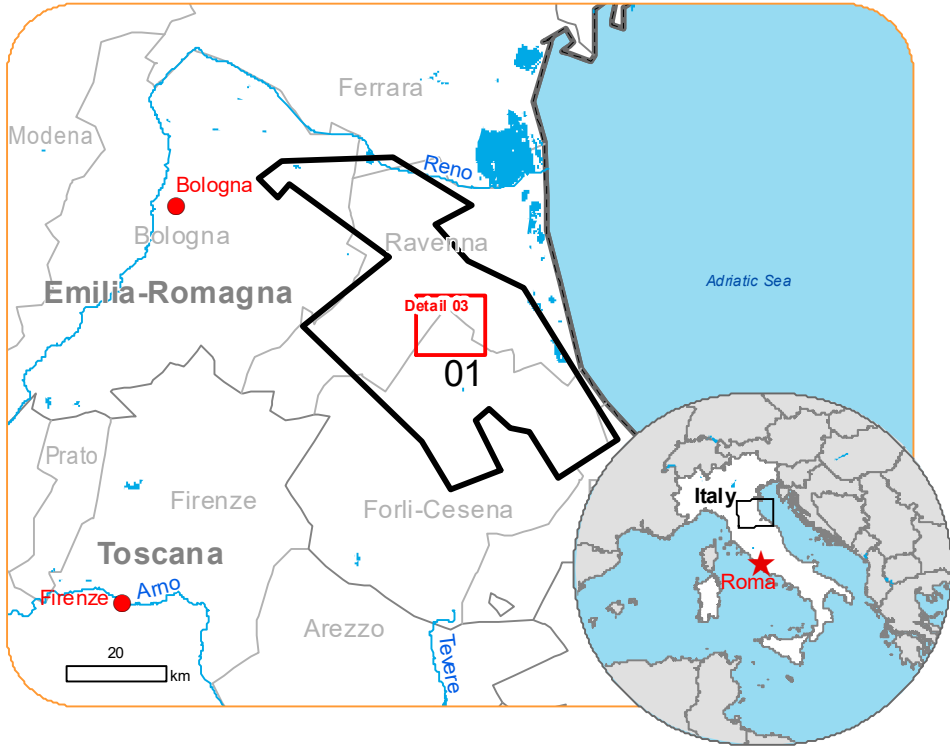
The thematic layer has been derived from post-event satellite image using a semi-automatic approach. Please be aware that the thematic accuracy might be lower in urban areas due to inherent limitations of the SAR analysis technique).  
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**Situation as of 18/05/2023 16:55 UTC**  
Delineation MONIT01 - Detail map 03



	<b>Previous flooded area</b> 2,080.5 ha 23.6% of total in AOI		<b>Potentially affected population</b> ~ 450 21.4% of total affected
	<b>Flooded area</b> 1,487.6 ha 13.3% of total in AOI		

**Potentially Affected Built-up and Transportations**

	<b>Built-up</b> 5.6 ha 35.9% of total affected		<b>Road</b> 23.9 km 15.2% of total affected		<b>Airport or heliport</b> 2.7 ha 0.5 km 100% of total affected
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Crisis Information	Facilities
<b>Crisis Information</b>	 Long-distance pipelines or lines
 Flooded Area	 Local pipelines or lines
 Previous Flooded Area (17/05/2023 16:56 - 17:14 UTC)	 Power plant
 Area of Interest	 Sport and recreation constructions
 Image Footprint	<b>Transportation</b>
<b>Administrative boundaries</b>	 Highway
 Province	 Main road
 Municipality	 Local road
<b>Placenames</b>	 Track
 Placename	 Railway
<b>Built-Up Area</b>	 Airport runway
 Residential	 Airfield
 Non residential	All data displayed on the map(s), as well as the Land Use -Land Cover layer,
 School, university and research buildings	is available in the Crisis Information Package and the Base Layer Package (for reference data).
<b>Hydrography</b>	All products and data are also available for download on the activation webpage.
 River	
 Stream	
 Lake	
 Reservoir	

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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Population data: GHS Population Grid © European Commission, 2022 [https://ghsl.jrc.ec.europa.eu/ghs\\_pop2022.php](https://ghsl.jrc.ec.europa.eu/ghs_pop2022.php)  
Digital Elevation Model: SRTM (90 m) or (30 m) (NASA/USGS).

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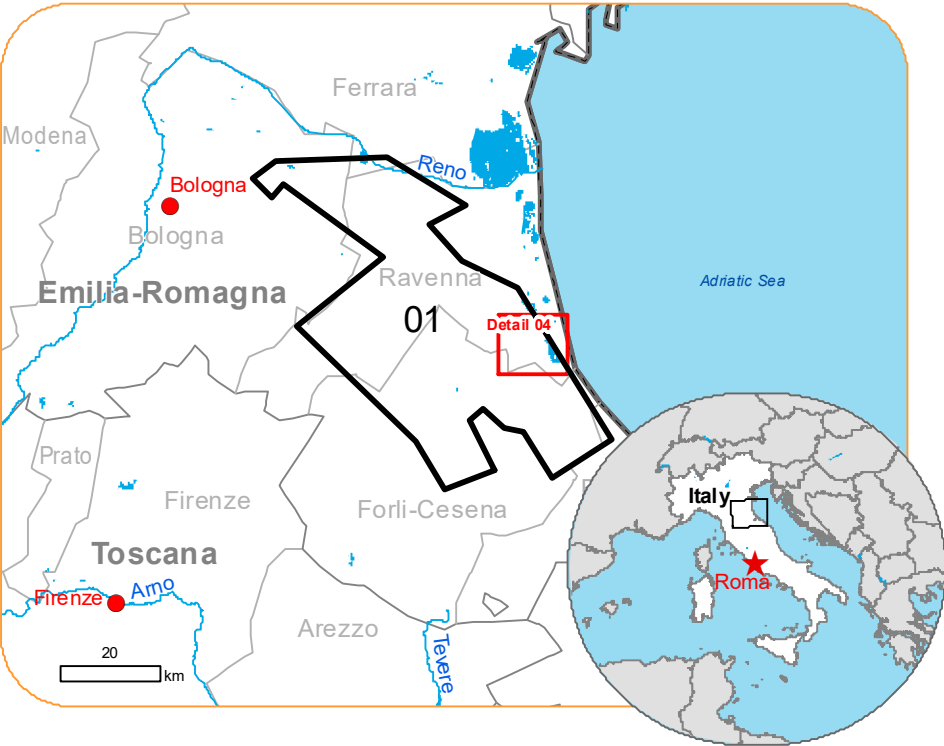
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Situation as of 18/05/2023 16:55 UTC  
Delineation MONIT01 - Detail map 04



**Previous flooded area**  
1,574.4 ha  
17.9% of total in AOI  
**Flooded area**  
1,025.0 ha  
9.1% of total in AOI

**Potentially affected population**  
~ 100  
4.8% of total affected

**Potentially Affected Built-up and Transportations**

**Built-Up**  
4.1 ha  
23.6% of total affected

**Road**  
19.6 km  
12.5% of total affected

Crisis Information	Facilities
<b>Crisis Information</b>	Long-distance pipelines or lines
Flooded Area	Mining or extraction site
Previous Flooded Area	Power plant
(17/05/2023 16:56 -	Sport and recreation constructions
Image Footprint	Dump Site
<b>General Information</b>	<b>Transportation</b>
Area of Interest	Highway
Image Footprint	Main road
<b>Administrative boundaries</b>	Local road
Province	Track
Municipality	Airfield runway
<b>Placenames</b>	Airfield
Placename	All data displayed on the map(s), as well as the Land Use - Land Cover layer, is available in the Crisis Information Package and the Base Layer Package (for reference data). All products and data are also available for download on the activation webpage.
<b>Built-Up Area</b>	
Residential	
Non residential	
Military	
<b>Hydrography</b>	
River	
Stream	
Lake	
Land Subject to Inundation	
Reservoir	
River	

**Event:**  
A new wave of severe weather has hit again the areas in the south-eastern Emilia-Romagna region in Italy. The same area was faced with floods already on 2 May 2023, which resulted in three deadly victims. These rains also caused landslides in the areas of the middle Apennines, which have left hundred people displaced. On 16 May 2023, a new perturbation has raised river levels again. The hydrometric threshold was reached in the basins of the Idice, Samoggia, Savio, Marzeno, Volte, Marecchia, Pisciatello, Ausa, and Montone rivers. New floods are expected in the areas as well as possible evacuations. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, flood and landslide extent identification and monitoring.

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EMSR664 AOI: 01 Forlì Delineation

Consequences within the AOI		Unit of measurement	Affected	Total in AOI
Previous flooded area		ha		9,797.6
Flooded area		ha		11,212.4
Estimated population	Number of inhabitants		~ 2,100	~ 550,000
Built-up	Residential Buildings	ha	10.3	7,069.6
	Office buildings	ha	0.0	34.3
	Wholesale and retail trade buildings	ha	0.0	26.1
	Industrial buildings	ha	3.5	2,062.9
	School, university and research buildings	ha	0.0	86.1
	Hospital or institutional care buildings	ha	0.0	34.2
	Other non-residential buildings	ha	0.0	139.6
	Military	ha	1.8	245.9
	Cemetery	ha	0.0	98.2
Transportation	Airfield runways	ha	3.1	471.6
	Helipad	ha	0.0	0.2
	Airfield runways	km	0.5	11.9
	Highways	km	0.3	337.6
	Primary Road	km	3.1	293.6
	Secondary Road	km	3.0	500.9
	Local Road	km	24.7	2,956.9
	Cart Track	km	125.8	4,473.2
	Long-distance railways	km	0.9	295.1
Facilities	Settling Basin	ha	0.2	45.3
	Dams	ha	0.0	0.0
	Constructions for mining or extraction	ha	5.1	135.8
	Power plant constructions	ha	7.9	144.4
	Sport and recreation constructions	ha	7.5	902.9
	Other civil engineering works not elsewhere classified	ha	0.0	20.7
	Long-distance pipelines, communication and electricity lines	km	54.3	744.7
	Local pipelines and cables	km	1.2	22.5
Land use	Arable land	ha	9,611.8	101,505.8
	Heterogeneous agricultural areas	ha	1,377.3	88,054.6
	Permanent crops	ha	129.6	3,090.4
	Inland wetlands	ha	48.3	1,917.1
	Other	ha	39.9	13,511.8
	Coastal wetlands	ha	4.5	718.8
	Forests	ha	1.0	2,503.6
	Pastures	ha	0.0	221.3
	Shrub and/or herbaceous vegetation association	ha	0.0	2,370.9
	Open spaces with little or no vegetation	ha	0.0	385.4

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<https://emergency.copernicus.eu/mapping/ems/online-manual-rapid-mapping-products>

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EUROPEAN UNION

