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European
Commission

REPORT OF ACTIVATION ON EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE, REPUBLIC OF TÜRKIYE

Activation ID: EMSR648

In collaboration with International Charter



All maps (published on <https://emergency.copernicus.eu/mapping/list-of-components/EMSR648>) and this presentation are produced by the JRC, e-GEOS, SERTIT, GMV, GAF

Last update: 17/02/2023 10:00



COPERNICUS
EMERGENCY
MANAGEMENT
SERVICE

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

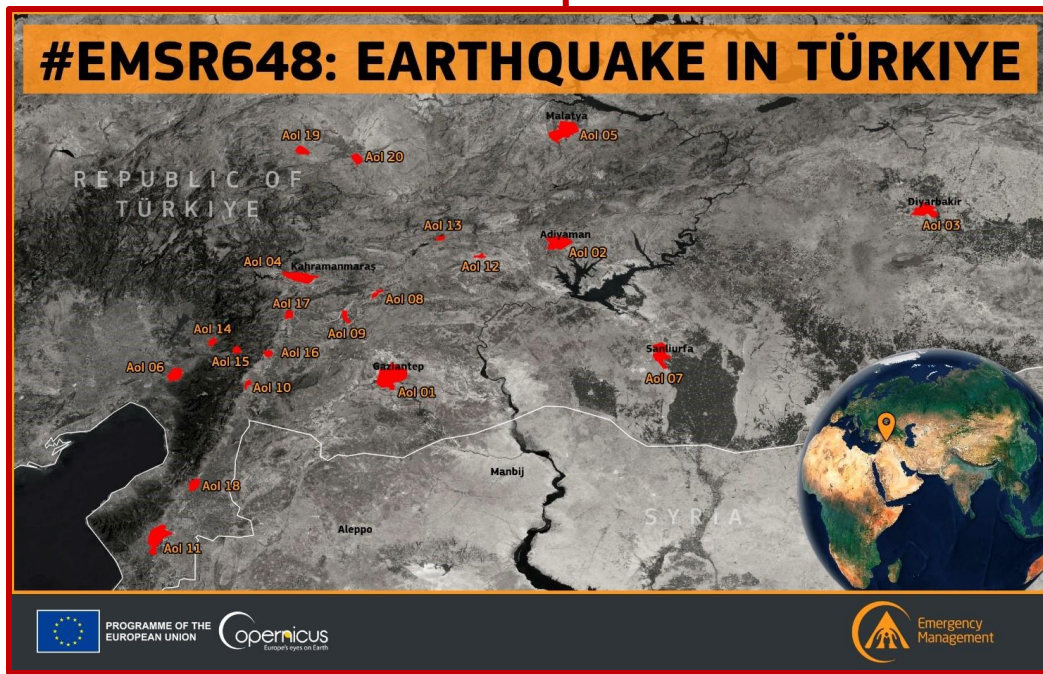
Event date: 06/02/2023 01:27 UTC

A 7.8-magnitude quake struck just after 4 a.m. Monday morning local time, 23 kilometres (14.2 miles) east of Nurdagi, Gaziantep province. It is one of the strongest earthquakes to hit Republic of Türkiye in more than 100 years. The event caused dozens of collapsed buildings and fatalities.

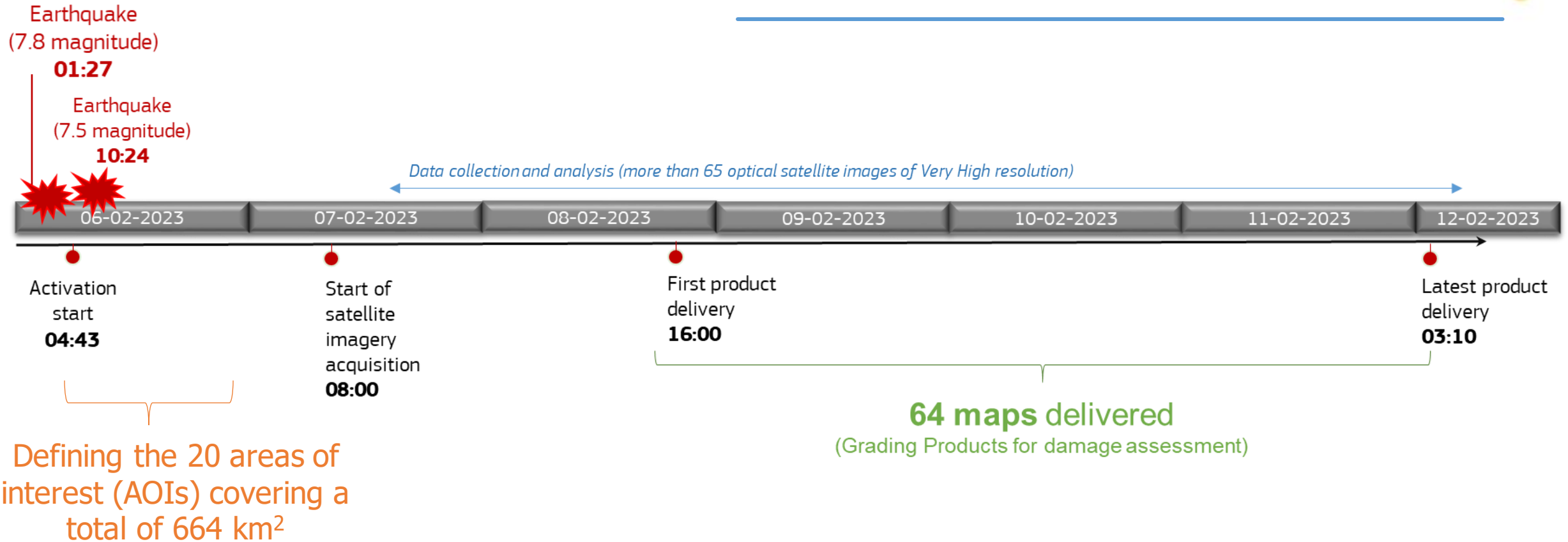


The European Commission's Copernicus emergency satellite mapping system was activated by the ERCC on 6 February at 04:43 UTC to support damage assessment (**less than 4 hours after the M7.8. earthquake**).

Starting from 07 February, optical satellite images of very high resolution (less than 1 meter) were acquired **over 20 areas of interest (AOIs)** located near the epicenters of the earthquakes.



EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648





M 7.8 in Türkiye on 06 Feb 2023 01:17 UTC

[Summary](#)

[Impact](#)

[Meteo](#)

[GTS](#)

[Maps & Reports](#)

[Media](#)

[Resources](#)

Event summary

This earthquake can have a high humanitarian impact based on the magnitude and the affected population and their vulnerability.

GDACS ID	EQ 1357372
Earthquake Magnitude:	7.8M
Glide number:	EQ-2023-000015-TUR
Depth:	17.925 Km
Lat/Lon:	37.1736 , 37.032
Event Date:	06 Feb 2023 01:17 UTC 06 Feb 2023 04:17 Local
Exposed Population:	Less then 100 people in MMI X 8.4 million (in MMI>=VII)
Inserted at:	06 Feb 2023 01:40 UTC
INFORM Coping capacity:	3.2 (Türkiye)
Maximum Wave Height observed:	0.17 m

GDACS Score

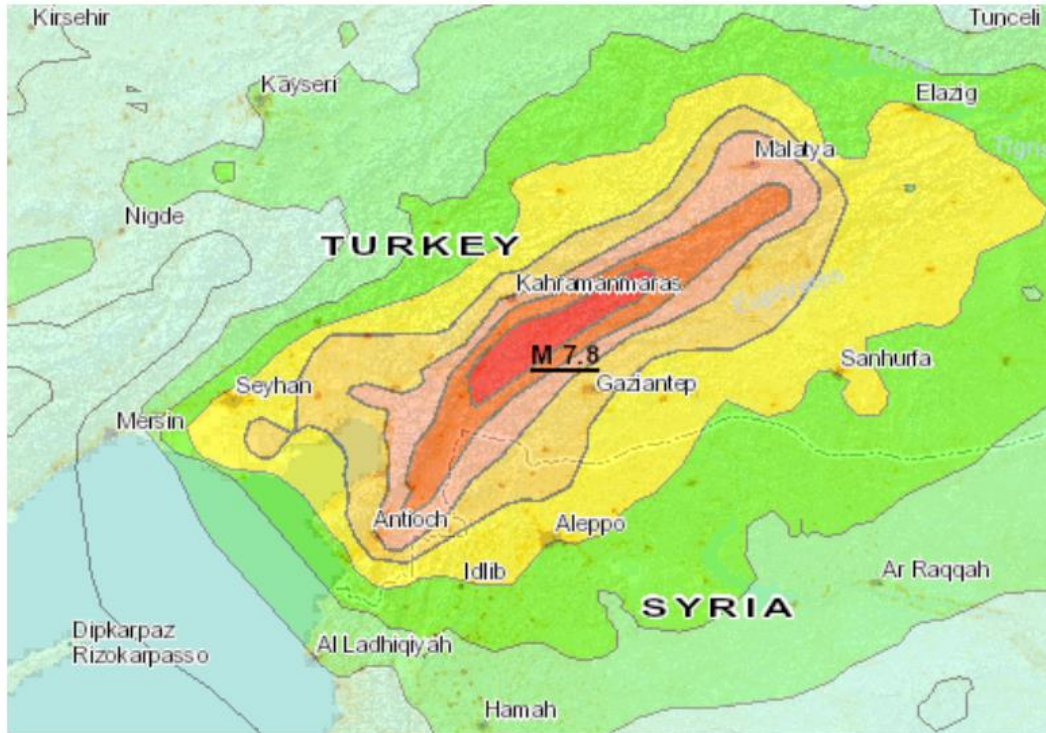


For more info on GDACS alert score click [here](#).

	Earthquake (Shakemap)	GDACS score
NEIC	4.4	4.4

Maximum expected impact using different data sources.

ShakeMaps (USGS, <https://earthquake.usgs.gov/data/shakemap/>)



Exposed population

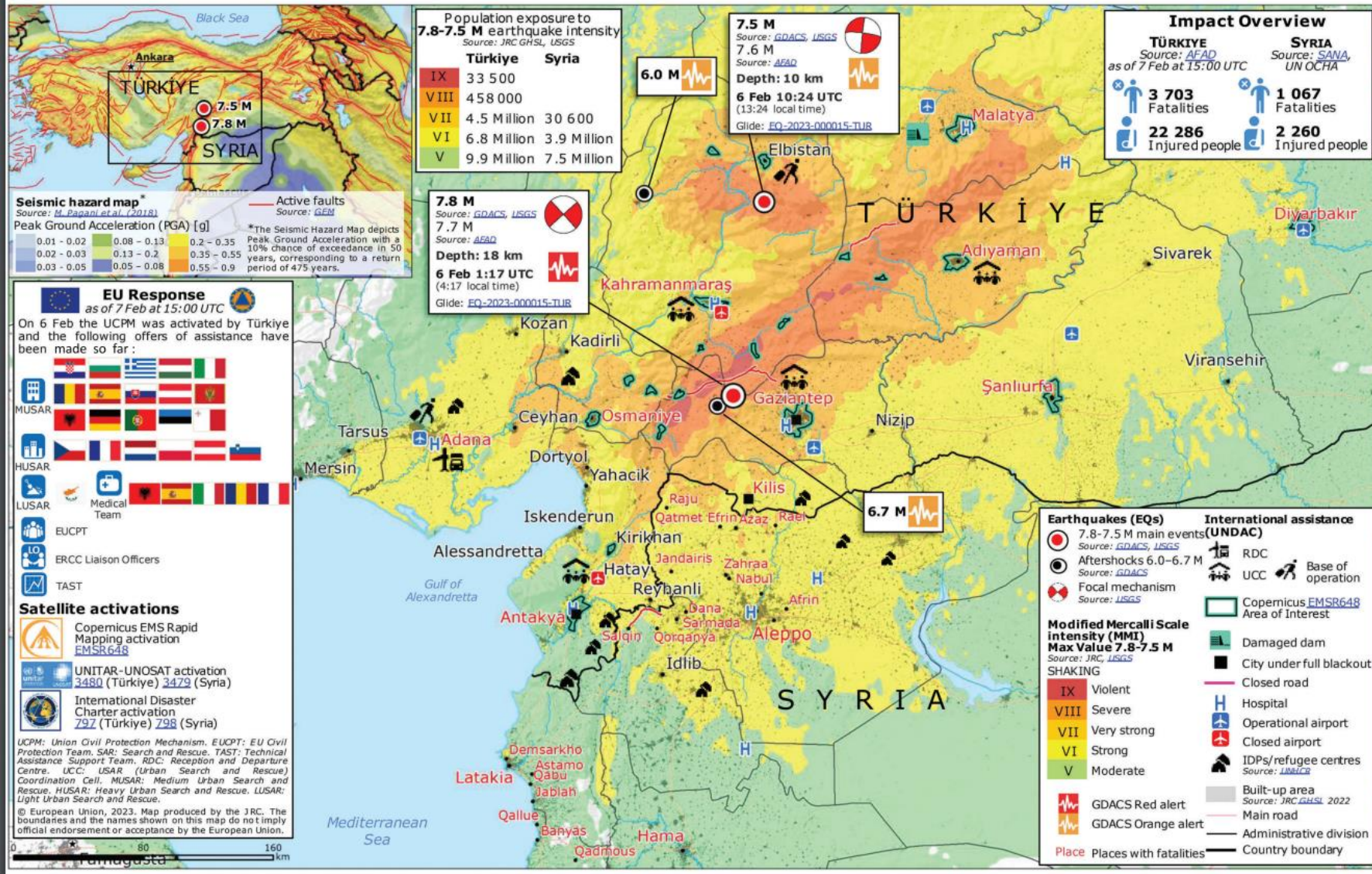
Intensity	Population
IX	180000 people
VIII	1 million people
VII	6.7 million people
VI	11.5 million people
V	22.4 million people

PERCEIVED SHAKING	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	None	None	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
INTENSITY	≤ III	IV	V	VI	VII	VIII	IX	X+

ECHO Daily Map

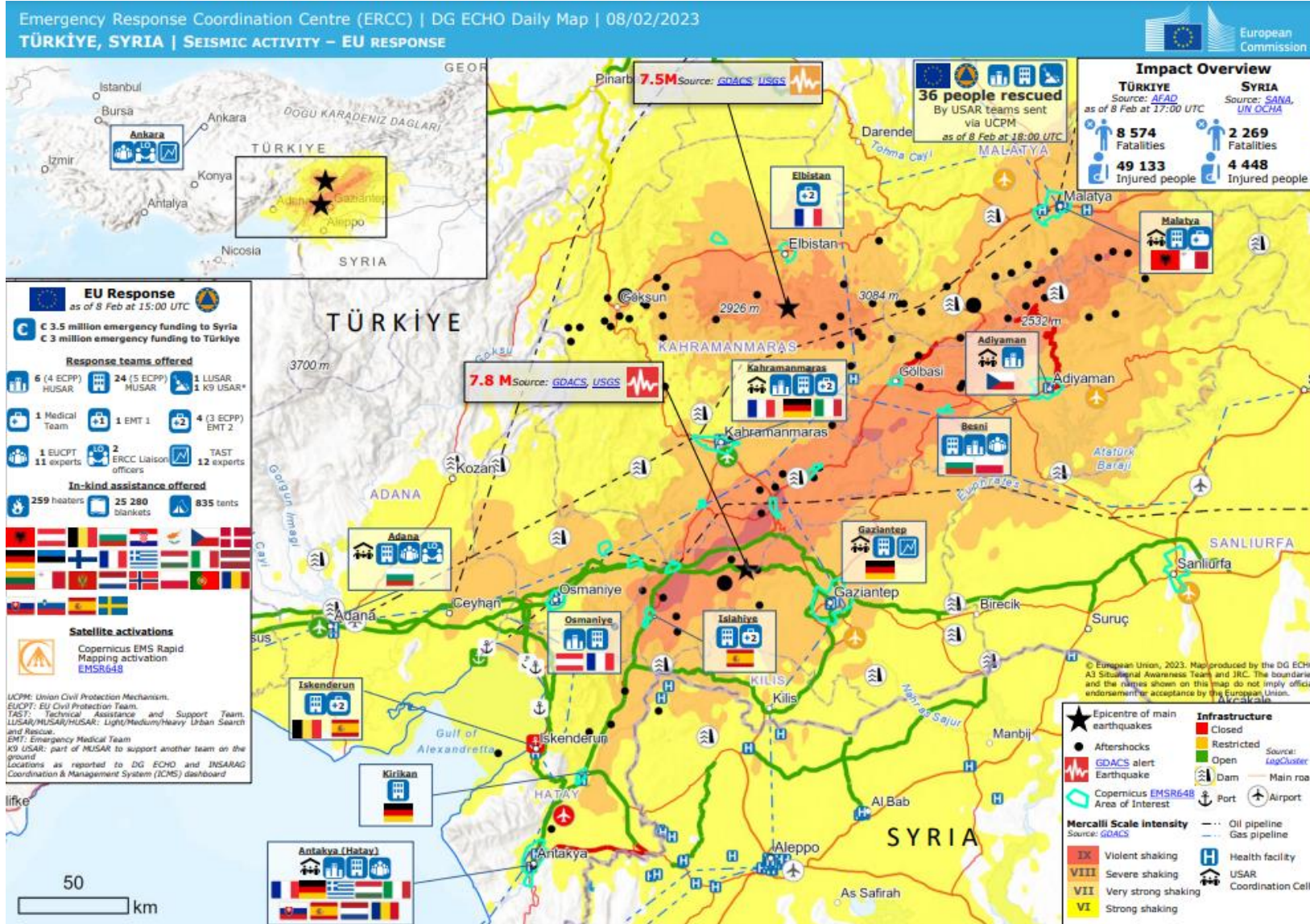
Emergency Response Coordination Centre (ERCC) – DG ECHO Daily Map | 07/02/2023

Türkiye, Syria | Seismic activity of 6 February



Available at:
<https://ercportal.jrc.ec.europa.eu/ECHO-Products/Maps#/maps/4394>

ECHO Daily Map



Available at:
<https://erccportal.jrc.ec.europa.eu/ECHO-Products/Maps#/maps/4396>

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOIn.	AOI nme	Area (km ²)	Estimated population **	Production status	Affected roads (km) *	Affected building (***) or buildings blocks *	Temporary/Spontaneous camps *	
							No.	Ha (for larger camps)
1	Gaziantep	6 12	4 1,191,03	Completed	0	72 ***	118	
2	Adiyaman	2 6	56 209,2	Completed	12	83	27	6.6
3	Diyarbakir	2 5	81 562,4	Completed	-	64	14	
4	Kahramanm aras	6 5	04 384,4	Completed	21	927 ***	4	
5	Malatya	7 8	95 423,2	Completed	6	229		10.3
6	Osmaniye	4 3	231 122	Completed	9	116	115	
7	Sanliurfa	0 6	55 501,6	Completed	-	3		
8	Pazarcik	7	77 25,4	Completed	-	79 ***	6	
9	Cumhuriyet	2 1	53 16,6	Completed	0	8		
10	Islahiye	7	36 16,0	Completed	15	33	24	4.9

* Sum of assets identified as Destroyed, Damaged and Possibly damaged

** The population density grids that were used to estimate the potentially affected population is based on the Turkish census 2011 and has been adjusted based on the 2019 version of the World Population Prospect (WPP2019).

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI n.	AOI name	Area (km ²)	Estimated population **	Production status	Affected roads (km) *	Affected building (***) or buildings blocks *	Temporary/Spontaneous camps *	
							No.	Ha (for larger camps)
11	Antakya	5 8	30 385,4	Completed	14	502	93	12.1
12	Erdemoglu	6	77 12,0	Completed	-	166 ***	3	
13	Golbasi	6	31 31,4	Completed	1	172 ***	161	
14	Duzici	0 1	56 33,5	Completed	0	5 ***	2	0.2
15	Bahce	4	67 12,4	Completed	-	2 ***		0.8
16	Nurdagi	4	58 12,2	Completed	2	64	44	11.1
17	Turkoglu	4	94 36,0	Completed	-	60		
18	Kirikhan	2 1	37 63,5	Completed	1	593 ***	22	
19	Afsin	3 1	25 33,7	Completed	0	56 ***		
20	Elbistan	8 1	97 658	Completed	2	289 ***	11	

* Source: Copernicus activation EMSR648. Sum of assets identified as Destroyed, Damaged and Possibly damaged

** The population density grids that were used to estimate the potentially affected population is based on the Turkish census 2011 and has been adjusted based on the 2019 version of the World Population Prospect (WPP2019).

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

- Total area covered by the 20 AOIs: 664 km²
- Optical satellite images of very high resolution (less than 1 meter) were acquired between 07 and 10 February to cover all AOIs

On 10 February, 100 % of the area covered by the 20 AOIs have been analysed (72% on 09 February)



Estimated population
in the 20 AOIs:
4,279,646



Affected roads:
84 km



Affected building
blocks: **1,161** hectares

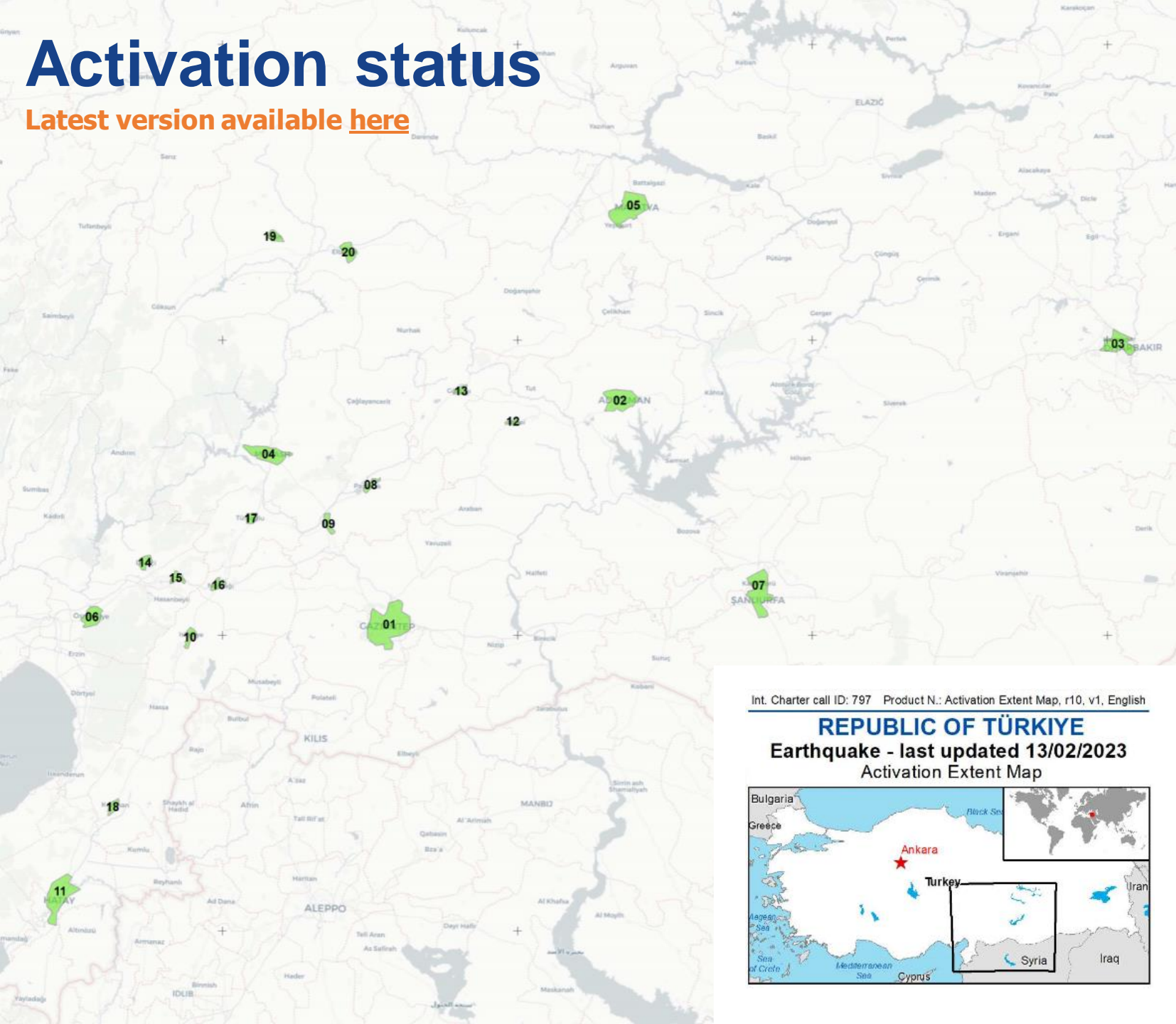
Affected buildings:
3,361



Temporary/Spontaneous
camps:
644 (No.) and **46 (Ha., for
larger camps)**

Activation status

Latest version available [here](#)



Int. Charter call ID: 797 Product N.: Activation Extent Map, r10, v1, English

REPUBLIC OF TÜRKİYE Earthquake - last updated 13/02/2023 Activation Extent Map



AOI 01 / GAZIANTEP

COMPLETED

- Grading Product:
WorldView-2, 08/02/2023 09:01 UTC

- Grading Monit01:

Pleiades, 11/02/2023 08:18 UTC

AOI 02 / ADIYAMAN

COMPLETED

- Grading Product:
Pleiades, 08/02/2023 07:52 UTC

- Grading Monit01:

WorldView-2, 09/02/2023 08:23 UTC

AOI 03 / DIYARBAKIR

COMPLETED

- Grading Product:
Pleiades, 09/02/2023 07:44 UTC
WorldView-2, 09/02/2023 08:23 UTC

- Grading Monit01:

Pleiades, 10/02/2023 08:01 UTC

AOI 04 / KAHRAMANMARAS

COMPLETED

- Grading Product:
Pleiades, 07/02/2023 07:59 UTC

- Grading Monit01:

Pleiades, 08/02/2023 08:11 UTC

AOI 05 / MALATYA

COMPLETED

- Grading Product:
Pleiades, 09/02/2023 08:23 UTC

AOI 06 / OSMANIYE

COMPLETED

- Grading Product:
Pleiades, 07/02/2023 08:06 UTC

- Grading Monit01:

Pleiades, 07/02/2023 08:42 UTC

AOI 07 / SANLIURFA

COMPLETED

- Grading Product:
Pleiades, 08/02/2023 07:52 UTC

AOI 08 / PAZARCIK

COMPLETED

- Grading Product:
WorldView-2, 08/02/2023 09:01 UTC

- Grading Monit01:

Pleiades, 09/02/2023 08:33 UTC

AOI 09 / CUMHURİYET

COMPLETED

- Grading Product:
Pleiades, 07/02/2023 08:49 UTC

- Grading Monit01:

WorldView-2, 08/02/2023 09:01 UTC

AOI 10 / ISLAHIYE

COMPLETED

- Grading Product:
Pleiades, 07/02/2023 08:00 UTC

- Grading Monit01:

Pleiades, 08/02/2023 08:41 UTC

- Grading Monit02:

Pleiades, 09/02/2023 08:33 UTC

AOI 11 / ANTAKYA

COMPLETED

- Grading Product:
Pleiades, 07/02/2023 08:00 UTC

- Grading Monit01:

WorldView-2, 09/02/2023 08:27 UTC

AOI 12 / ERDEMOĞLU

COMPLETED

- Grading Product:
WorldView-2, 09/02/2023 08:27 UTC

- Grading Monit01:

Pleiades, 11/02/2023 08:19 UTC

AOI 13 / GOLBASI

COMPLETED

- Grading Product:
WorldView-2, 08/02/2023 09:01 UTC

- Grading Monit01:

Pleiades, 11/02/2023 08:17 UTC

- Grading Monit02:

Pleiades, 12/02/2023 08:11 UTC

AOI 14 / DUZICI

COMPLETED

- Grading Product: Short Report - No visible impact
Pleiades, 08/02/2023 08:41 UTC

- Grading Monit01:

Pleiades, 09/02/2023 08:33 UTC

AOI 15 / BAHÇE

COMPLETED

- Grading Product:
Pleiades, 08/02/2023 08:41 UTC

- Grading Monit01:

Pleiades, 09/02/2023 08:33 UTC

AOI 16 / NURDAGI

COMPLETED

- Grading Product:
Pleiades, 07/02/2023 08:00 UTC

- Grading Monit01:

Pleiades, 08/02/2023 08:41 UTC

AOI 17 / TURKOĞLU

COMPLETED

- Grading Product:
Pleiades, 08/02/2023 08:41 UTC

AOI 18 / KIRIKHAN

COMPLETED

- Grading Product:
Pleiades, 08/02/2023 08:42 UTC

AOI 19 / AFSIN

COMPLETED

- Grading Product:
Pleiades, 07/02/2023 08:48 UTC

AOI 20 / ELBİSTAN

COMPLETED

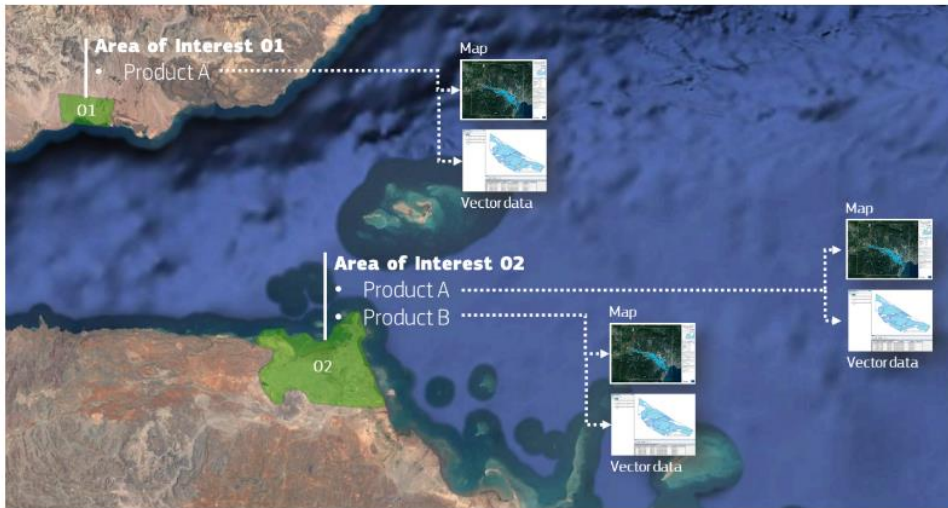
- Grading Product:
Pleiades, 08/02/2023 08:41 UTC

- Grading Monit01:

Pleiades, 09/02/2023 08:31 UTC



Copernicus EMS Rapid Mapping



What is delivered in a Product?

Each product consists of two delivery packages:

- Ready-to-Print [maps](#)
- [Vector package](#) (composed of a geographic dataset)

More information on the CEMS Rapid Mapping products in our online [Product User Manual](#)

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI04 – Kahramanmaras 56 km²

Event date: 06/02/2023 01:27 UTC

PRE-EVENT

Situatios as of 27/06/2021 00:00 UTC



POST-EVENT

Situatios as of 07/02/2023 07:59 UTC

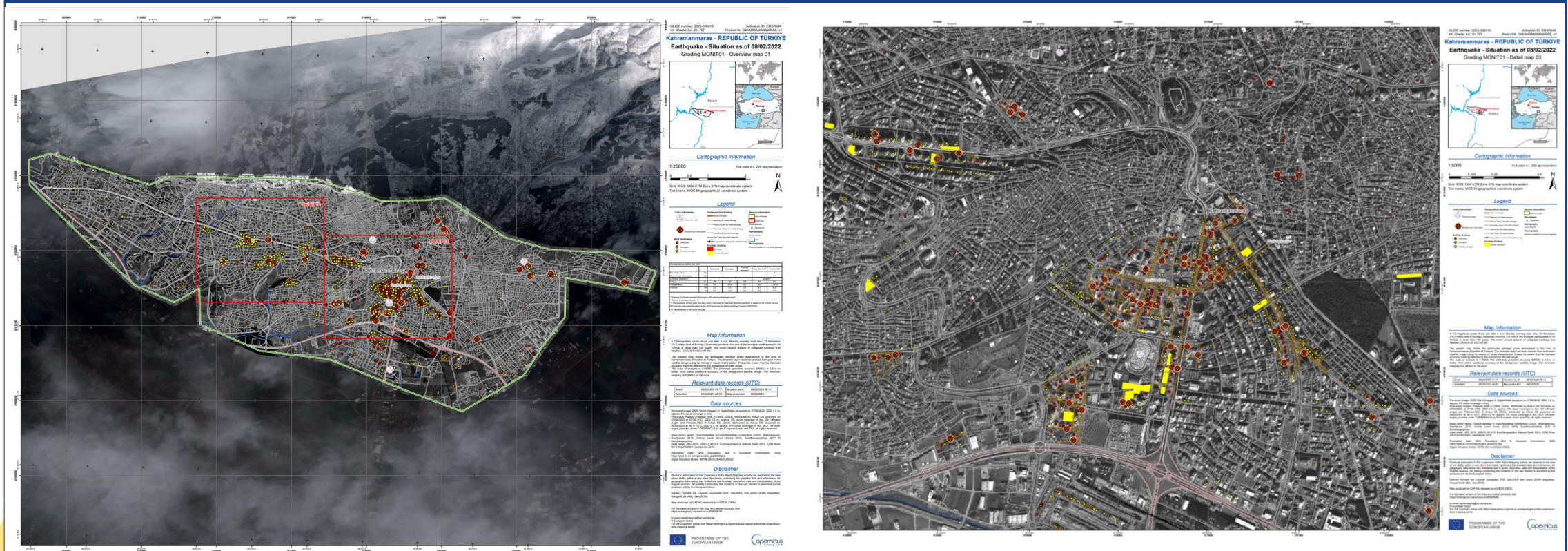


EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI04 – Kahramanmaras 56 km²

Event date: 06/02/2023 01:27 UTC

PRODUCTS DELIVERED Situation as of 09/02/2023 07:32 UTC



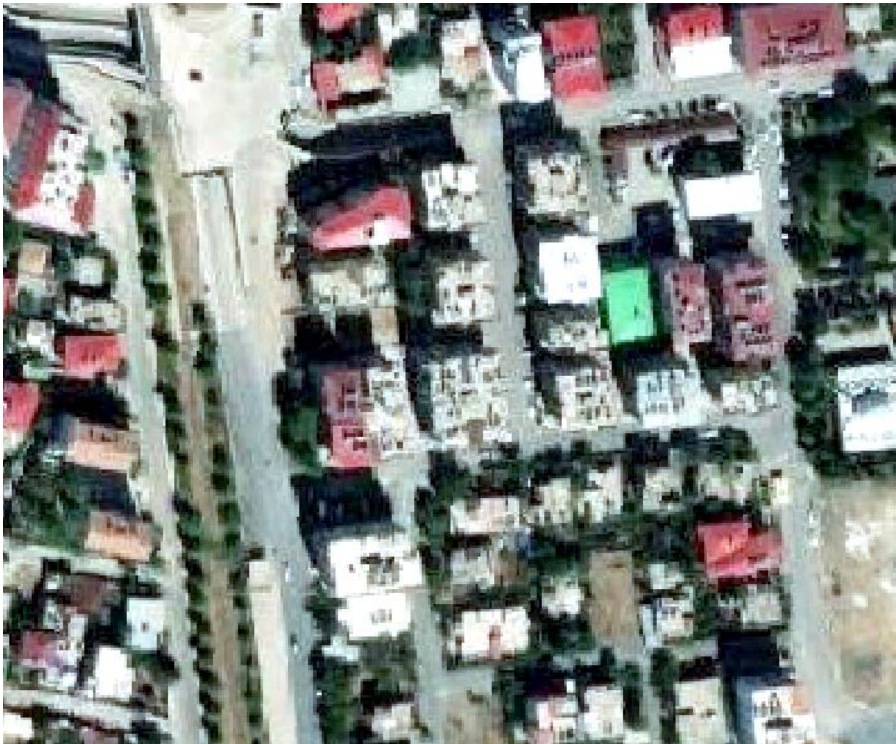
EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI10 - Islahiye, 12,97 Km2

Event date: 06/02/2023 01:27 UTC

PRE-EVENT

Situation as of 27/09/2021 00:00 UTC



POST-EVENT

Situation as of 07/02/2023 08:00 UTC

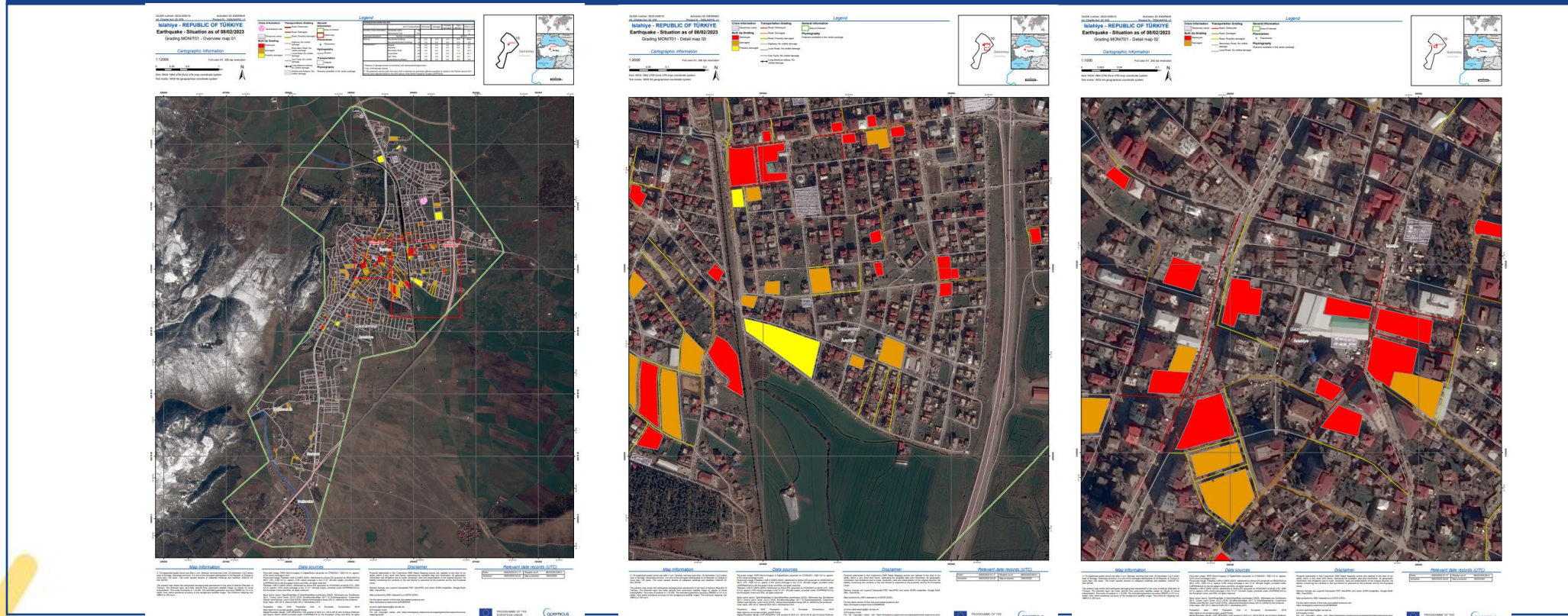


EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI10 - Islahiye, 12,97 Km2

Event date: 06/02/2023 01:27 UTC

PRODUCT DELIVERED
Situation as of 08/02/2023 22:23 UTC



EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI11 – Antakya 85 km²

Event date: 06/02/2023 01:27 UTC

PRE-EVENT

Situatios as of 27/09/2021 00:00 UTC



POST-EVENT

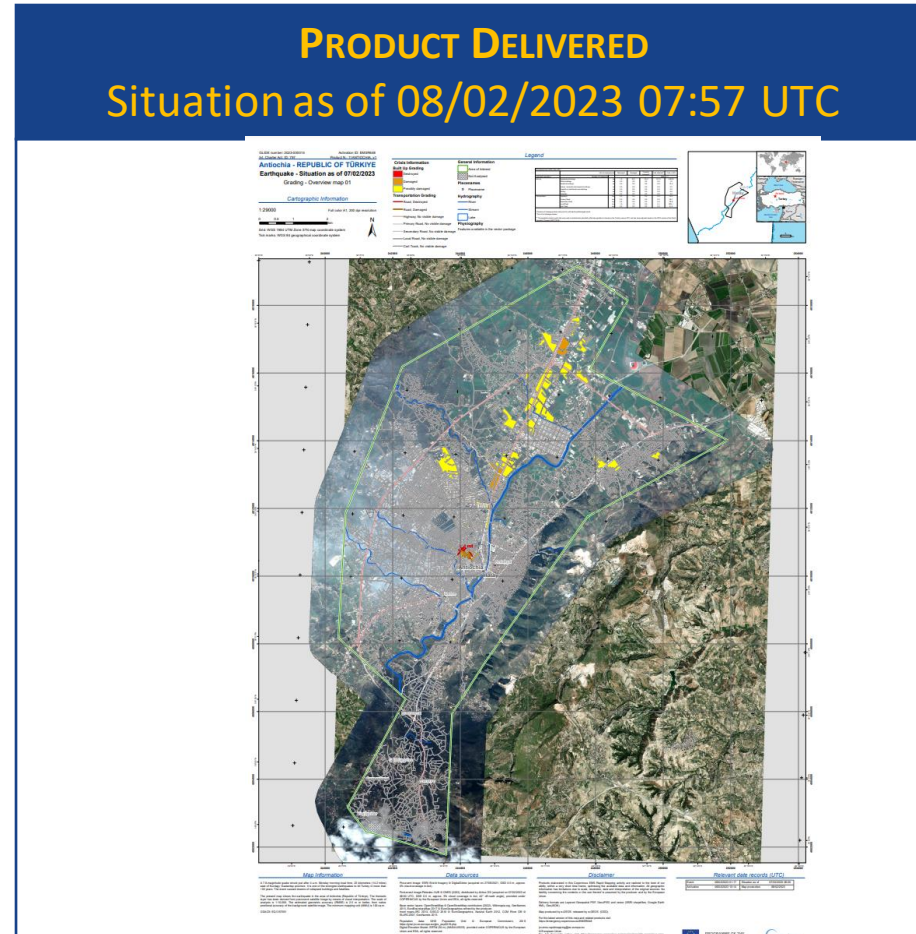
Situatios as of 07/02/2023 08:00 UTC



EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI11 – Antiochia 85 km²

Event date: 06/02/2023 01:27 UTC



Media photos available for AOI10 - ISLAHIYE



Source:

<https://www.rudaw.net/turkish/middleeast/turkey/0802202311>

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI19 – Afsin, 29 km²

Event date: 06/02/2023 01:27 UTC

Twitter pictures from a building in the preceding slide (first floor has collapsed)

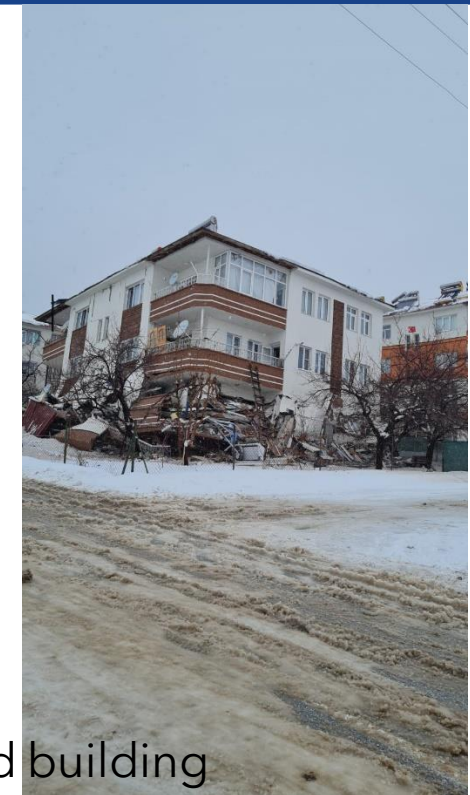
POST-EVENT

Situation as of 07/02/2023 08:48 UTC



SOCIAL MEDIA (TWITTER)

Situation as of 07/02/2023



collapsed building

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI19 – Afsin, 29 km²

Town Hall

Event date: 06/02/2023 01:27 UTC

PRE-EVENT

Situation as of 27/06/2021 00:00 UTC



POST-EVENT + TWITTER PICTURE

Situation as of 07/02/2023 08:48 UTC

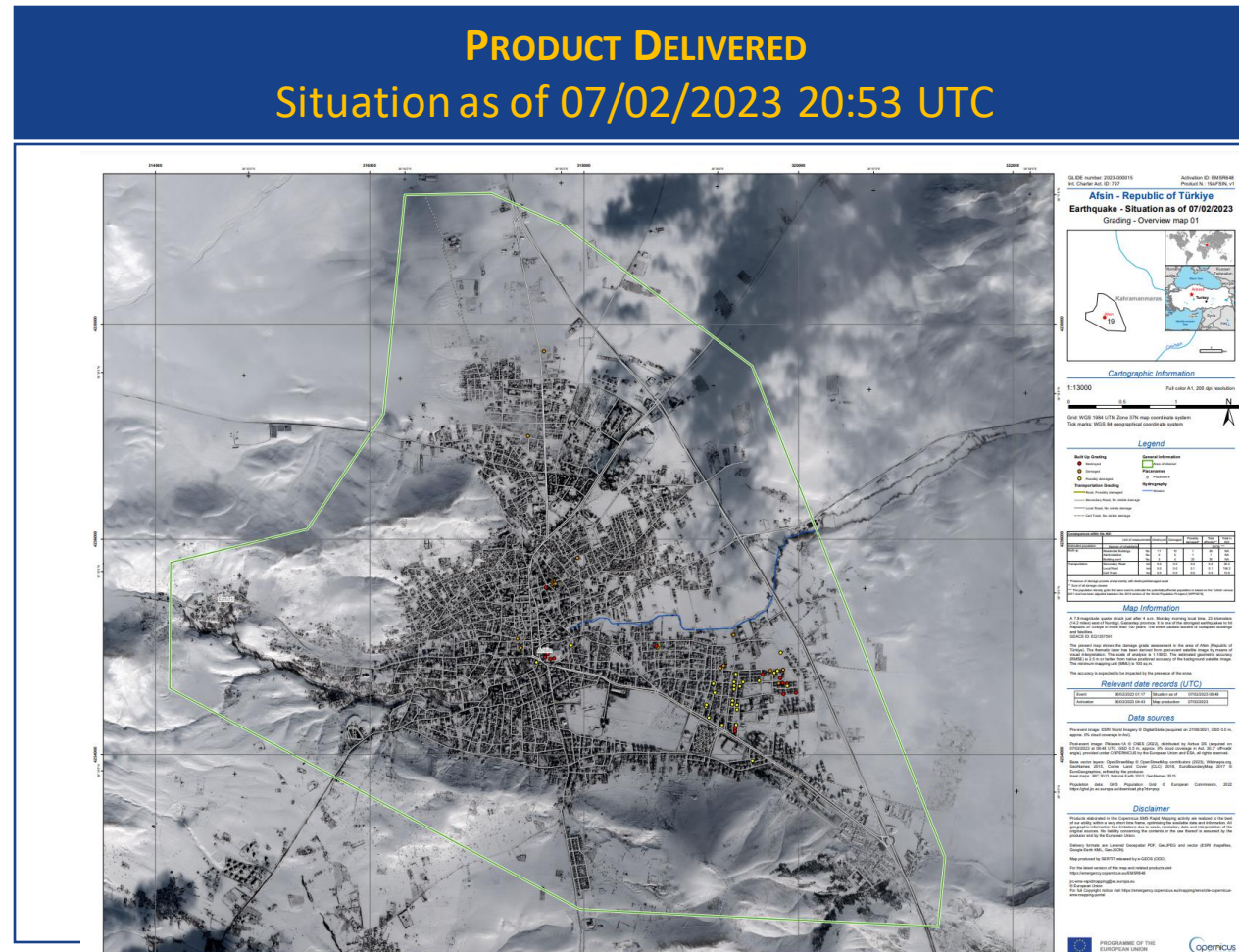


damaged town hall

EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI19 – Afsin, 29 km²

Event date: 06/02/2023 01:27 UTC



EARTHQUAKE EVENT IN EAST ANATOLIAN FAULT ZONE – EMSR648

AOI20 – Elbistan 24 km²

Event date: 06/02/2023 01:27 UTC

PRE-EVENT

Situation as of 11/06/2021 08:19 UTC



WorldView-2 © Maxar Technologies (2021), acquired on 11/06/2021 08:19 UTC, GSD 0.5 m

POST-EVENT

Situation as of 09/02/2023 08:23 UTC



WorldView-2 © Maxar Technologies (2023), acquired on 09/02/2023 08:23 UTC, GSD 0.5 m

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EVENTS, ONLINE, and MAP VIEWERS



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Rapid Mapping



Risk & Recovery Mapping



Floods



Fires



Droughts



Population



Built-up areas