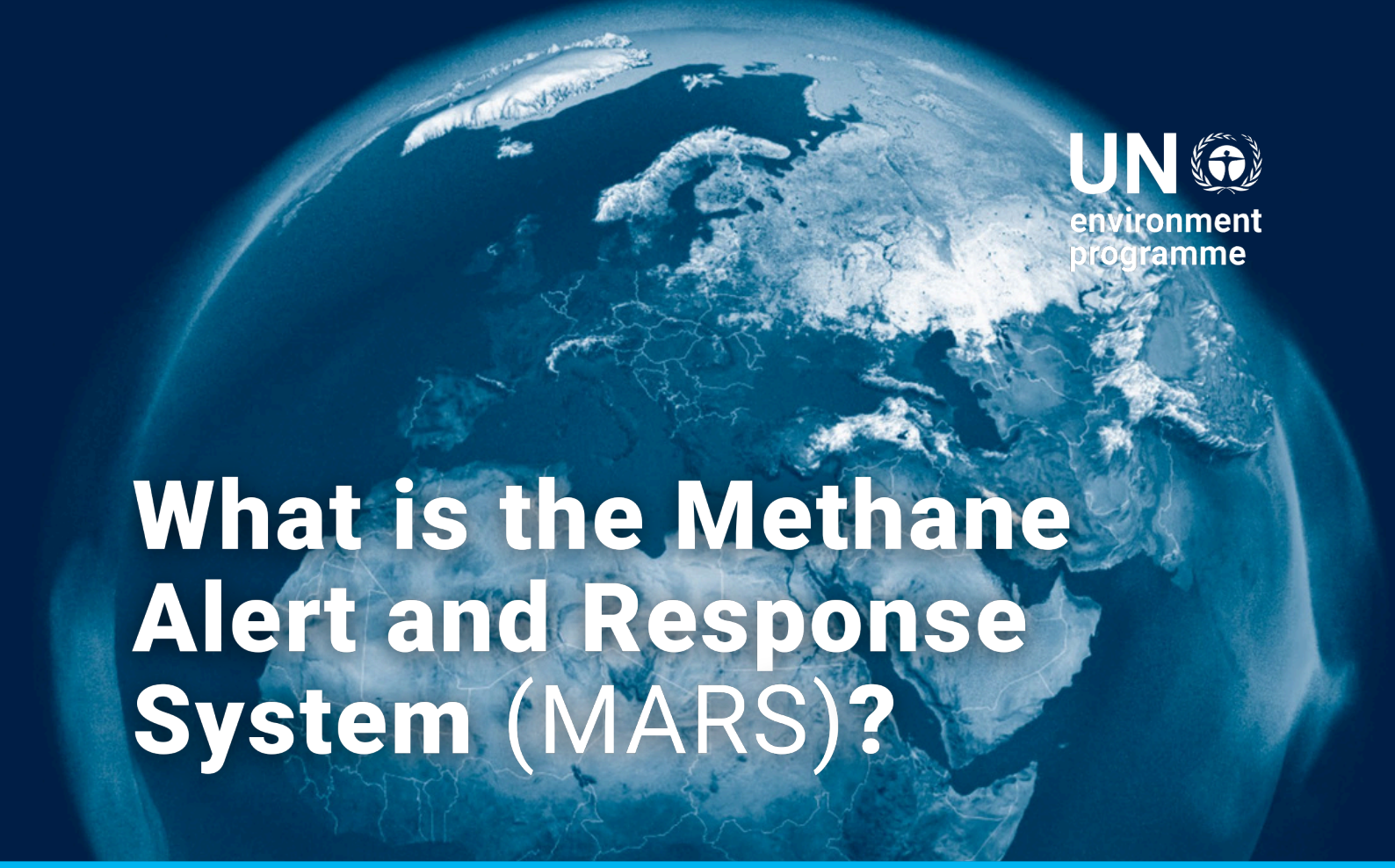


UN environment programme

What is the Methane Alert and Response System (MARS)?

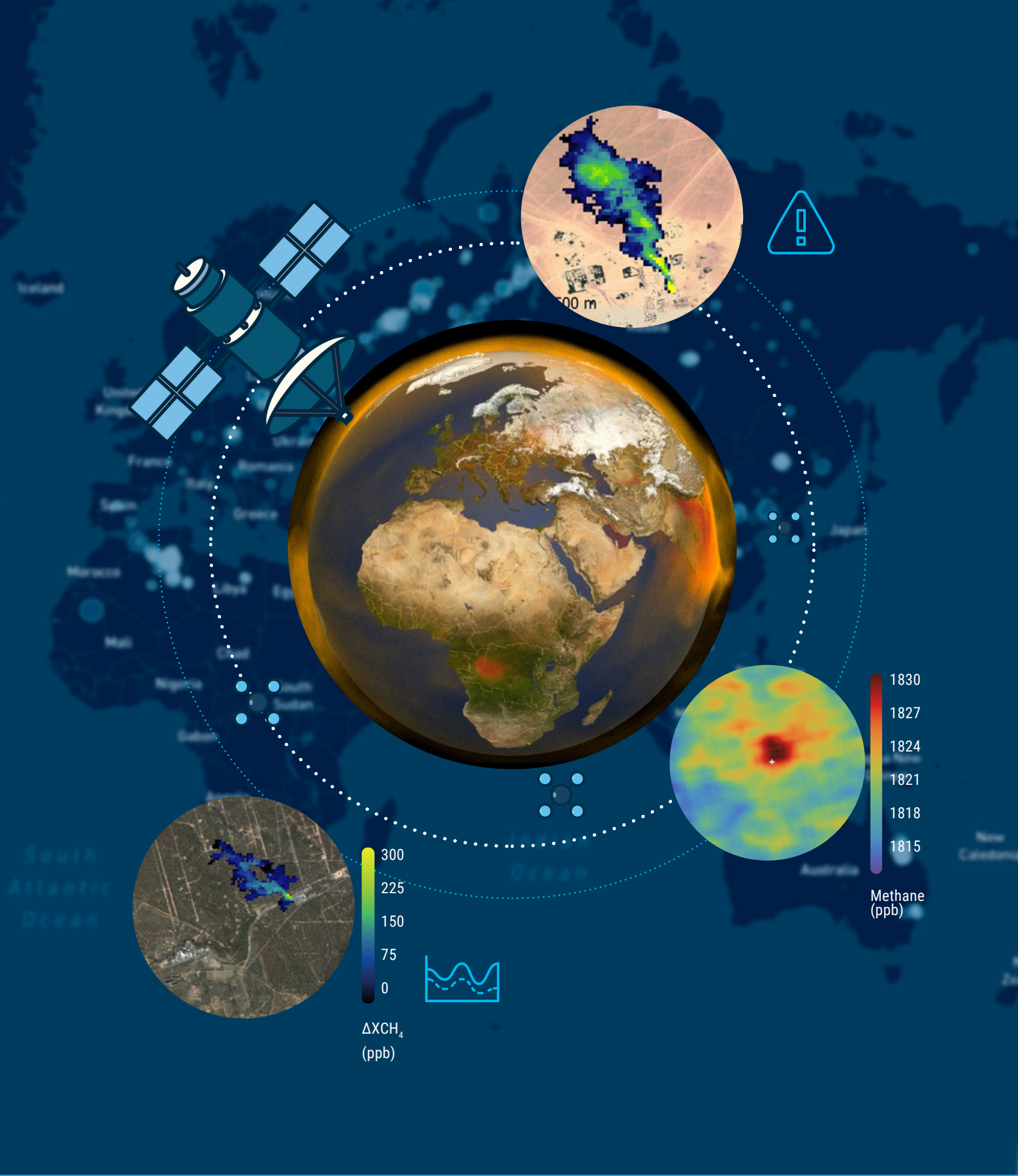
UNEP's International Methane Emissions Observatory (IMEO) announced its groundbreaking Methane Alert and Response System (MARS) at COP 27, with support from the European Commission, the U.S. Government, Global Methane Hub and the Bezos Earth Fund.

MARS is the first global system providing rapid, actionable and transparent data on methane emissions thanks to satellites. The data is then made available to policy-makers, businesses and the general public.

MARS will first focus on significant methane emission sources from the energy sector. With more satellites coming on-line in the near future, MARS will be able to detect smaller plumes and expand to other methane emitting sectors such as waste and agriculture.

More accurate data will enable more targeted action. MARS connects methane detection to notification processes that promote transparent, on-the-ground mitigation efforts.

Thanks to its unique global database of empirically verified methane emissions, IMEO supports companies and governments globally to use data for strategic mitigation actions and to identify science-based policy options.


500 m
1830
1827
1824
1821
1818
1815
Methane
(ppb)
300
225
150
75
0
ΔXCH4
(ppb)

MARS HAS FOUR COMPONENTS

1 METHANE

Detect and Attribute

IMEO will coordinate with the Committee on Earth Observation Satellites and work with existing global mapping satellites (EU/ESA Copernicus Sentinel 5P/ TROPOMI) to identify very large methane plumes and methane hot spots and conduct further analysis using other satellites (e.g. ASI PRISMA; EU/ESA Copernicus Sentinel-2; NASA Landsat; DLR EnMAP) and datasets to enable attribution of the event to a specific source.

2 ALERT

Notify and Engage Stakeholders

IMEO will work directly and through partners to notify relevant governments and companies to large emission events happening in or near their jurisdictions or operations and will continue this engagement as more information becomes available.

3 RESPONSE

Stakeholders Take Abatement Action

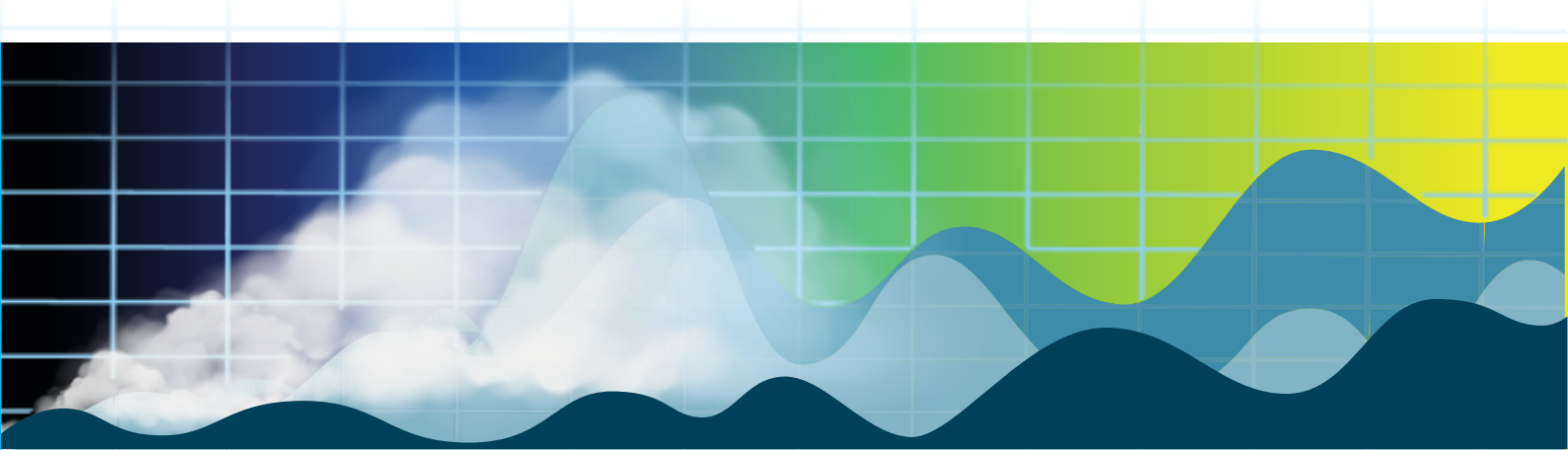
It will be up to the notified stakeholders to determine how best to respond to the notified emissions and share their actions with MARS to show initiative. As appropriate, MARS partners will be available to provide support services at this stage, e.g. assistance with assessing mitigation opportunities and/or support for mitigation actions.

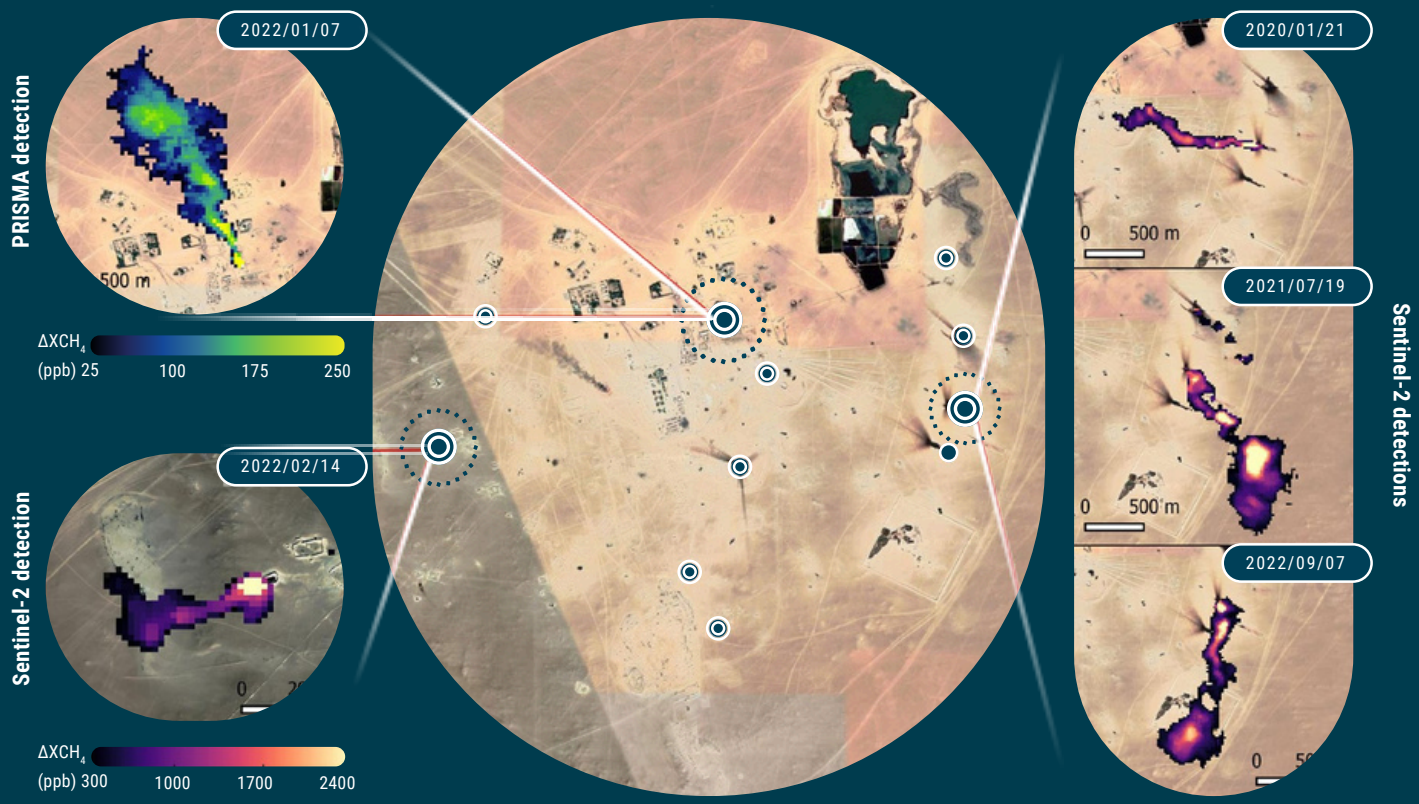
4 SYSTEM

Track, Learn, Collaborate, Improve

IMEO will continue to monitor the event location for future emissions as mitigation efforts proceed. Once the MARS system is fully operational, IMEO and partners will make data and analysis publicly available 30 days post detection. IMEO will foster collaboration across the MARS ecosystem to draw lessons from these notified events that can be applied to improve MARS and methane action in general.

In implementing MARS, IMEO will collaborate with various institutional partners, including the International Energy Agency and the Climate and Clean Air Coalition.





Why is it critical to curb methane emissions?

Methane is a powerful greenhouse gas and the second biggest driver of global warming.

Emissions of methane have soared faster than at any time since the 1980s.

To keep the average temperature increase at 1.5°C, the world needs urgently to reduce methane emissions by about a third, according to the latest Intergovernmental Panel on Climate Change Assessment Report published in April 2022.

Slashing emissions of this powerful greenhouse gas is the single fastest way to tackle climate change in the short-term and move towards a net-zero world.

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