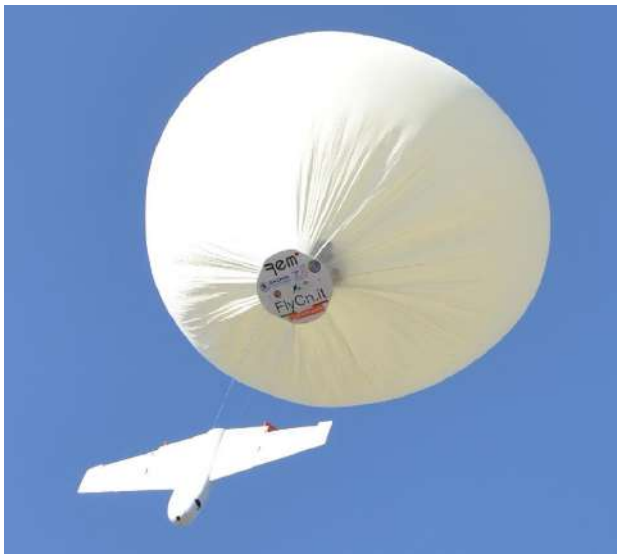
All the space-related INGV flyers are here!

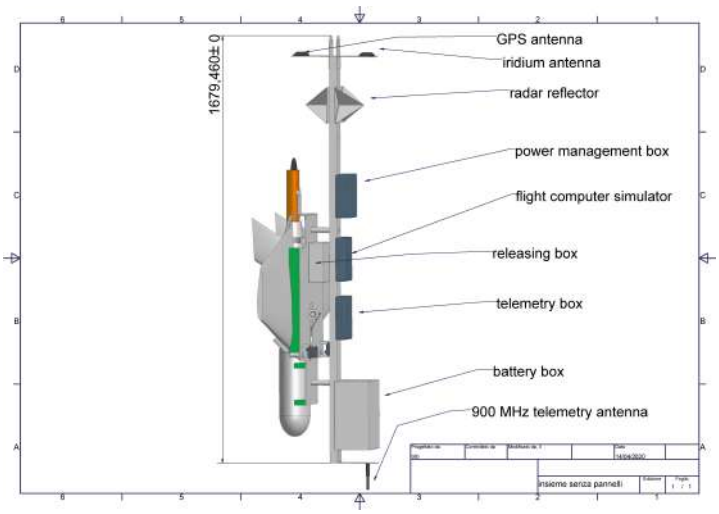
INGV participates in the launch of the HERMES scientific payload, HEmera Returning MESsenger

A common issue for long-duration balloon flights in the polar area is high bit rate data transferring. Just few hours after launch, balloons are not reachable with direct radio link and often satellite links are not fast enough to allow the necessary transfer rate or, simply, too expensive. For this reason, stratospheric balloon borne experiments carry out on board data recording systems that need to be recovered after termination in order to have the complete data set. But not always it is easy or possible to reach the landing site, especially during the polar winter.

ATTACH A GLIDER TO A PAYLOAD, WHY DO IT?

The aim of the project is to provide an autonomous glider capable of physically carrying the data (stored on a SSD memory) from the stratospheric platform to a recovery point on the ground and transporting physical objects (like air samples) obtained at float too. We estimate that an electrical motorglider released in the stratosphere can fly for several hundred kilometers.
The glider is installed on the balloon payload through a remotely controlled release system and connected with the main computer to receive data and geographic coordinates of the recovery point.





HOW THE SYSTEM IS COMPOSED

The system is composed of payload, glider and ground station. The main modules that make up the payload handle battery power and communications. Also present are the flight computer simulator and the glider release system.
The Power Management module manages the system power supply, keeping the batteries in the correct state of health. The Com & Control module is responsible for managing satellite and line of sight communications.
The Releaser operates the glider detachment sequence: detachment of the umbilical connector, removal of restraints, thrust.
The Flight Computer Simulator produces a large amount of synthetic data with which to fill the SSD memory mounted on the glider, simulating the presence of a flight computer.
The Ground Station can decide the flight termination through a command via a Iridium satellite channel, after uploading the coordinates of the landing point to the autopilot.

graphic design Laboratorio Grafica e Immagini | INGV

ESRANGE, JULY 2022: THE **LAUNCH**

Balloon launched on: **7/21/2022** at **2:34 utc**
Launch site: **Esrange, Kiruna, Sweden**
Balloon launched by: **Swedish Space Corporation (SSC)**
Balloon manufacturer/size/composition: **Zero Pressure Balloon**
End of flight (L for landing time, W for last contact, otherwise termination time): **7/21/2022** at **7:20 utc (L)**
Balloon flight duration (F: time at float only, otherwise total flight time in d:days / h:hours or m:minutes -): **4 h 45 m**
Landing site: **In ESRANGE's zone "B" 53 km NE of launch point**.

The **team** that participated in the launch campaign @ Esrange: **A. Iarocci, G. Di Stefano, M. Vallocchia, A. Lepore, P. Adobbato and S. Bacci**

THE **PAYLOAD TRAJECTORY**

https://stratocat.com.ar/fichas-e/2022/KRN-20220721.htm

THE **MOMENTS BEFORE LAUNCH**