

Milan, May 9th 2008

## **SELEX GALILEO's Atomic Clock makes history aboard GIOVE-B**

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On May 7<sup>th</sup> at 01:37 the first hydrogen atomic clock (Passive Hydrogen Maser - PHM) ever embarked on a space mission reached operating temperature and started to generate the reference signal on board the Giove-B Galileo satellite, launched from Baikonur, Kazakhstan on April 27<sup>th</sup>.

The PHM, developed by SELEX GALILEO of Finmeccanica at the Milan site, succeeded two pre-flight qualifications, the second in extreme stress conditions, and has proven its capability to withstand to the launch stress loads. The signal transmission also succeeded due to the perfect activation of the solid state amplifiers also supplied by the Company.

The Giove-B satellite has made a historic step for the Galileo navigation system which relies on the PHM's precision to allow position accuracy of less than 1 meter without synchronisation from ground control for over 8 hours.

PHM was developed and built in Italy by SELEX GALILEO's highly skilled technicians. In 2005 it was awarded the "Premio Innovazione di Finmeccanica" (the Innovation award of Finmeccanica) for its extremely compact weight, volume, low energy consumption and state of the art performance. PHM atomic clocks are planned to be fitted on-board all 30 operational satellites in the Galileo Constellation.

### **Notes to editors:**

**The atomic clock and its use in the Galileo navigation system.** The PHM is an atomic clock with outstanding stability averaging times from 1 to 100,000 seconds, to be used in precise positioning, time keeping and other on-board applications for the Galileo satellite system. It is designed to perform in space environment for no less than 10 years. The operating principle exploits the stimulated energy emission occurring during the hyperfine transition of the atomic hydrogen in a miniaturised microwave cavity. The MASER is developed in collaboration with the Swiss company Sprectratime.

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