The Infrared Atmospheric Sounding Interferometer (IASI) is a key element of the payload embarked on METOP series of European meteorological polar-orbit satellites. IASI provides very accurate information about the atmosphere, land and oceans for weather predictions, climate and atmospheric chemistry studies. IASI measurements is designed to retrieve temperature and humidity profiles with a vertical resolution of one kilometer and an average accuracy of one Kelvin and 10 %, respectively. The IASI measurement technique is based on passive IR remote sensing using a precisely calibrated Fourier Transform Spectrometer operating in the 3.7 – 15.5 µm range and an associated infrared imager operating in the 10.3-12.5 µm range. The optical configuration of the sounder is based on a Michelson interferometer. Interferograms are processed by the onboard digital processing subsystem which performs the inverse Fourier Transform and the radiometric calibration. The integrated infrared imager allows the coregistration of the IASI soundings with the AVHRR imager onboard METOP. The first METOP satellite was successfully launched on the 19th of October 2006. The first interferogram was received at the CNES IASI TEC on the 27th of November 2006 and the first spectra were produced on board 2 days later. Dissemination of the data by Eumetsat began on the 24th of May 2007 in trial dissemination mode and was declared operational the 26th of July 2007 by Eumetsat and CNES. This paper provides an overview of the status of the instrument after 18 months in orbit and summarises the radiometric, spectral and geometric performances of the IASI instrument observed during this period. The spectral calibration is better than 2.10-6 and the radiometric absolute calibration is better than 0.5 K at 280K. There is no detectable evolution of these performances with time. In addition to the planned long term availability of the measurements (more than 15 years), this stability shows that IASI data are very well suited to calibrate other sensors and a reliable source of information for climate monitoring. Some slight evolutions of the Level 1 processing algorithms are nevertheless proposed for day 2 following some recommendations provided by the users, in particular at the Anglet Conference, and to facilitate the monitoring of the IASI performances by the TEC. An overview of these evolutions is provided. A companion paper presents the Near Real Time monitoring of the Level 1 IASI products at EUMETSAT and the anticipated improvements of these products for day 2.