nection with the invention it is preferable that the Kalman filter is arranged to estimate the measurement error in the calculated attitude based on a difference between predicted measured signals of the multiple sensors and actually measured signals of the multiple sensors. Therefore this Kalman-filter can perform a function not only in the attitude determination process, but also in the energy-management of the system by the energy manager module.

The invention will hereinafter be further elucidated with reference to the drawing of an exemplary embodiment of the attitude determination system of the invention. This embodiment is not restrictive with respect to the appended claims, and can be varied in many respects without departing from the scope of protection of said claims.

In the drawing:

-Figure 1 is a functional flow diagram of the system; and

-Figure 2 is a block diagram showing the data flow between different components of the system of the invention.

Wherever in the figures the same reference numerals are applied, these numerals refer to the same parts.

Making reference first to Figure 1, a block diagram is shown pertaining to a functional flow diagram of the system, which is generally denoted with reference 1.

While the system 1 is running, the attitude measurements are performed by the applied attitude sensors, which may be a gyro 5, a magnetometer 6, and a sun sensor 7 (see in particular figure 2). The frequency of the measurements by said sensors is variable. Block 5, 6, 7 in figure 1 represents the sensor measurements which are communicated to block 2 where filtering occurs. Preferably the applied filter is an Extended Kalman Filter (EKF) algorithm which may perform two functions. The Kalman filter calculates the attitude information from the sensor 5, 6, 7 measurements and from spacecraft kinematics according to a dynamic model 2a. Furthermore, the filter 2 produces an estimate of the sensor measurements in each sample. This estimation is used to calculate in module 2b an estimate of the measurement errors. These errors are calculated as the difference between the estimated sensor measurements and the actual measurements from the sensors.