For the estimation of effort, the COCOMO II model was used, which was based on the value of Function Points.

i-1) Function points

The Function Points calculation process was conducted only until the Unadjusted Function Points values where obtained, because it is these values which are employed by the COCOMO II model.
In identifying the Application Boundary, we considered the two Sensortag devices and the PC application not as being each a standalone system, but as two of three modules that make up the complete application. As a consequence, the internal communication between the modules does not constitute a transaction; also, the complete system results stand-alone, and does not therefore possess External Interface Files.

i-1.1) Transactions

In the following table Transaction (External Input, External Output, External Inquiry) are listed.
They are subdivided according to the Actor that is responsible for them.

	External Input	External Output	External Inquiry
User	Insert system calibration (3FP) Insert user general information (3FP) Insert helper contact information (3FP) Load defaults (3FP)	Accelerometer graph (4FP) Gyroscope graph (4FP) Label “Fall detection” (4FP) Label “Help requested” (4FP)	Open application settings (3FP) Select a Sensor (3FP) Scan (3FP) Start/Stop (3FP) Connect /Disconnect (3FP) Close button (3FP) Clean button (3FP)
Helper		Send email (4FP)	
Sensors	Gyroscope (3FP) Accelerometer (3FP) Snooze Alarm (Button 2) (3FP) Bluetooth connection Launchpad (4FP) Bluetooth connection Sensortags (4FP)		
Actuators		Buzzer “false alarm” (4FP)	

i-1.2) Internal Logical Files

In the following table, ILFs are listed. They are subdivided according to the software module they
belong to.

Module	Internal Logical Files
Sensortags	None
Launchpad	None
PC Application	User and helper information, calibration (7FP)

Total (unadjusted) Function Points: 81

i-2) Estimation of Effort
The estimation of effort was conducted with COCOMO II.

Scaling Drivers

Driver	*Value*
Precedentedness	High
Development Flexibility	Nominal
Risk Resolution	Nominal
Team Cohesion	High
Process Maturity	Very Low

Cost Drivers

Driver	*Value*
Facilities	Nominal
Personnel Experience	Nominal
Personnel Capability	High
Required Reusability	Low
Platform Difficulty	Nominal
Product Reliability and Complexity	Low
Required Development Schedule	Nominal

Results

	Value
Person-Months	7.4
Schedule Months	1.5
SLOC	4293