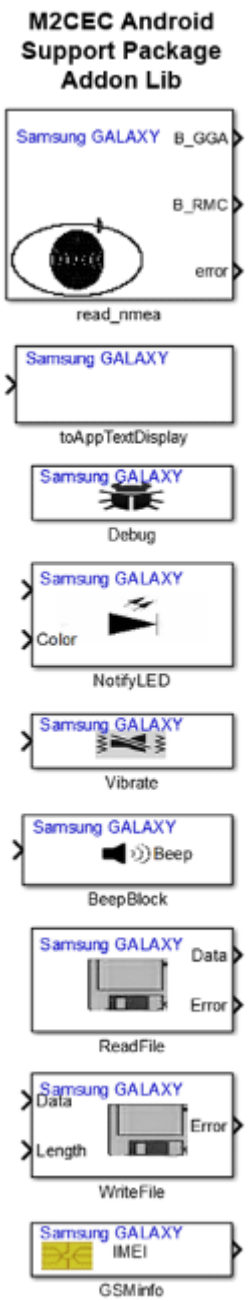
Telematics – Smartphone as a Multitalent for Sensoring

Modular sensor blockset for model based app development
Currently, the worldwide sales of smartphones is clearly more than one billion units per year. Recent smartphones include sensors of the same remarkably high quality and reliability as they are used in automotive as well. In order to address these sensors The MathWorks offers a Simulink blockset called „Samsung GALAXY Android Devices Support from Simulink“, which allows easy access to inputs as location, acceleration, light, humidity, camera data etc.. In addition to that, we provide a Simulink library with some valuable enhancements.

Raw data from GPS receiver
Our additional library blocks are seamlessly integrated with Simulink. In addition to the basic functionality from The MathWorks our library allows access to all raw data from the GPS receiver. I.e. for telematics applications you can not only get the current position, but also data as velocity, direction, number of satellites, HDOP, etc.. The values are provided as reliable inputs into your model based design application.

Automatic app generation
Applications, that are developed by a model based design approach, are basically hardware-independent and their code can be generated automatically. This way, you can easily automatically generate your app and download it on your smartphone. Furthermore, the configuration of a graphical user interface is covered in the model as well and it can be automatically generated the same way. Thus most diverse applications like ordinary data loggers or sophisticated algorithms for sensor fusion or even very complex algorithms and applications could be implemented on mobile devices fast and easily.

Simulation
Using Simulink all of our additional library blocks can be fully integrated in any simulation, so that your telematics application can be verified and validated at very early stages of the development process. Moreover, we support a text-based visualization of all data mentioned above.



Sensor data online and offline
Our library blocks enable you to efficiently save away data online, i.e. in real-time. Afterwards you can further process the data in an offline mode or re-import them into your application or simulation. What is more, using UDP you could even send the data in real-time to your back-office systems. There our specific communication handler ensures reliable data transfer and management.

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