

macio

The Black and White era is over – What is state-of-the-art GUI programming for embedded computers?

macio provides from industry projects (maritime industry, machine construction) new options for the development of visualizations on embedded devices. Software technology and hardware resources converge to develop more valuable software stacks. The question now is: How can one balance the use of object-orientated software technology for a given hardware performance and use their advantages? We show coding and design techniques to allow the auditorium to raise performance and quality of their user interface applications.

For more than 10 years high-level object-orientated software technologies assure a safer development of user interface applications. Java, C# (and others) developed in well established IDEs allow to code more accurately, faster and with more comfort than a pure C++ development would take place. Even more, coding errors occur less frequently than in a C++ environment. This development comfort comes at the expense of the required hardware resources – the technical and marketing advantages of high-level user interfaces could hardly be realized by embedded devices in the past.

With the upcoming x86 architectures, like the intel atom platform, things are changing. A convergence takes place. Especially since customer requirements like interaction via touch screen became more important and managements demand a single application logic for the usage in touch and non-touch environments. In our presentation we point out, what the developer can do to raise the performance of his application (speed, memory usage,...) and what user interface design aspects comes at high costs in terms of CPU time. Best practices in developing graphical assets for embedded devices completes the presentation.