

From Synchronous to Asynchronous Design

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Abstract

The most simple real time programming paradigm is a synchronous loop. This is an effective approach for simple systems, but at a certain level of concurrent activities an asynchronous design, based on scheduling tasks, becomes more effective. We will use a conventional television as case to show real time design strategies, starting with a straightforward analog television based on a synchronous design and incrementally extending the television to become a full-fledged digital TV with many concurrent functions.

The complete course ASPTM is owned by Embedded Systems Institute. To teach this course a license from Embedded Systems Institute is required. This material is preliminary course material. The final material and course information can be found at: www.esi.nl/cursus.

All Gaudí documents are available at:
<http://www.gaudisite.nl/>

1 Acknowledgements

The diagrams are a joined effort of Roland Mathijssen, Teun Hendriks and Gerrit Muller. Most of the material is based on material from the EXARCH course created by Ton Kostelijk.

References

- [1] Gerrit Muller. The system architecture homepage. <http://www.gaudisite.nl/index.html>, 1999.

History

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- Created as refactoring of Hard Real Time presentation