

# 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 ASP<sup>TM</sup> is owned by TNO-ESI. To teach this course a license from TNO-ESI is required. This material is preliminary course material.

All Gaudf 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