Media Processing Challenges in Today’s (and Tomorrow’s) Consumer SoCs

Jan-Willem van de Waerdt
NXP Semiconductors, USA

This presentation provides an industrial, hardware-centric perspective on embedded systems for real-time multimedia. It consists of two parts.

The first part provides some background in terms of NXP consumer SoCs. It provides a high level overview of a TV SoC, the PNX85500, and details one of its components, the TriMedia processor. This mediaprocessor is used for a multitude of diverse tasks and allows for efficient hardware/software co-design.

The second part zooms into some specific functions and challenges, related to the design of a TV SoC. This part addresses functions such as Frame Rate Conversion and 3D TV, and challenges such as off-chip memory communication, video compression and the need for “design for flexibility”.

It is the intent of the presentation to identify today's challenges from which research opportunities may be derived. Expect as many questions as answers…