

2A201: BLAZE

Blu-ray HD development

General Goals

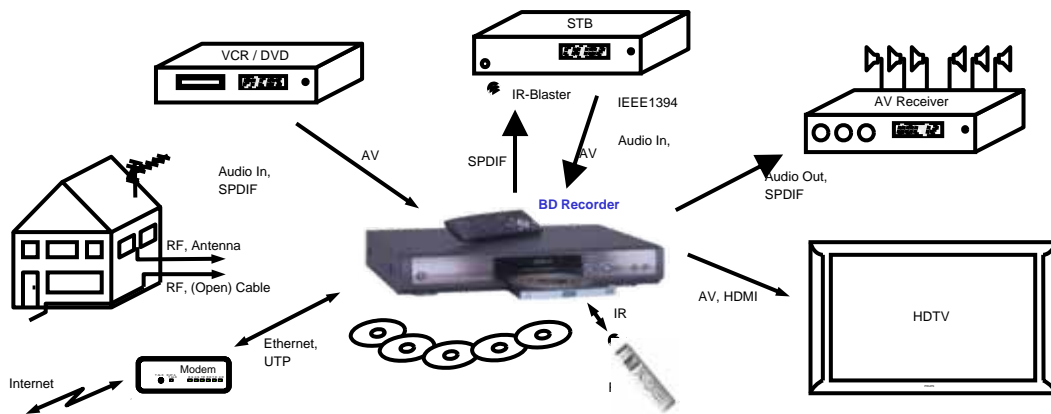
The BLAZE project aims at defining an overall architecture and development of components for the Blu-ray HD recorder

Scope

- Microelectronics for a Blu-ray codec:
 - System-On-Chip Integrated circuits.
 - Implementation of reconfigurable solutions for Blu-Ray codecs.
- Embedded firmware to test and operate the Blu-ray microelectronics.
- Generation of pre-recorded Blu-ray discs with content to test the microelectronics and firmware.
- Playback of both recordable and prerecorded Blu-ray discs.
- Research for the lowest cost storage medium including hybrid materials and mastering technologies.
- Acquisition of HDTV content from both broadcast and VOD services, with associated DRM.
- Storage of this content on recordable Blu-ray discs.
- Demonstrators and applications, integrating the individual functions into a full system.

Expected Impact

- The European Industry will take the lead in IC's and optical storage systems.
- Building a strong position in the distribution of HD content.
- Significant market shares of the BD HD storage market will put the European service industry in a stronger position.
- Important research on new optical storage methods will enable us to defend and expand the European position and take the lead into new research on holographic storage methods.
- Consumers will benefit from higher picture quality experiences.



Relation with the MEDEA - FUST (Future Storage) project

Fust has done preparatory work by strong participation in the standardization of the Blu-ray format as employed in Blaze.

Middleware created in Blaze is based on a prototype SW, derived from the FUST authoring software.

Partners:

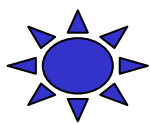


DaTARIUS in Austria
INPG in France
CEA LETI in France

MPO International in France
Philips in France and The Netherlands
SECUENZIA in Spain

STMicroelectronics SA in France
Telefonica I+D in Spain
Thomson in France

For further information please contact project manager: Wiel Louvenberg
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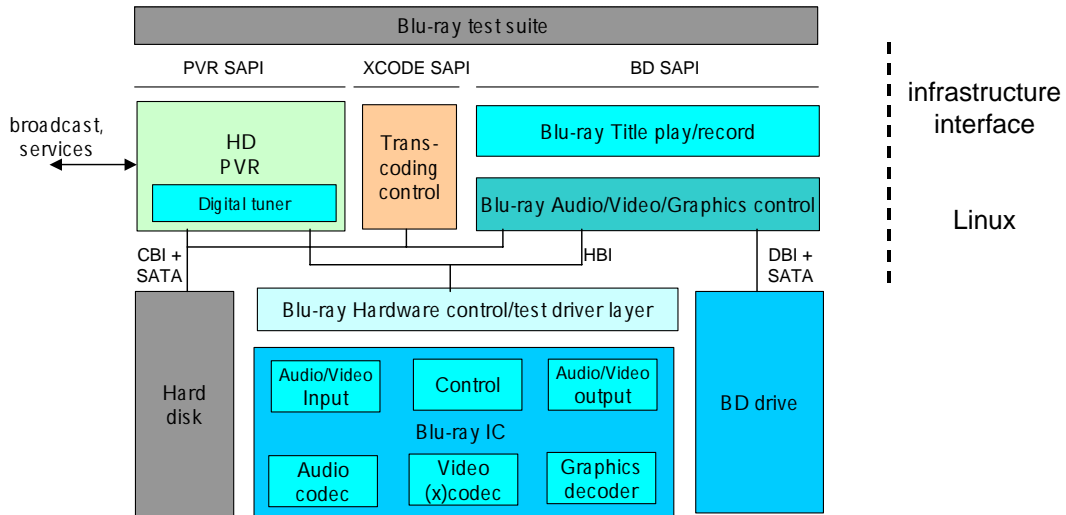
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Work Package 1: Overall architecture

Development of the end-to-end architecture of the BLAZE ICE terminal.

1. Decomposition into subsystems and components
2. Description of the interface between the Broadcast/VOD content acquisition subsystem and the Blu-ray subsystem (Content Blu-ray Interface CBI).
3. Description of the interface between the Blu-ray Drive and the Blu-ray codec microelectronics (Drive Blu-ray microelectronics Interface DBI)
4. Description of the interface between the Blu-ray codec microelectronics and the control/test firmware (Hardware Blu-ray firmware Interface HBI)
5. Functional specification of the BLAZE ICE terminal..



Work package 2: : ICs for Blu-Ray Terminals

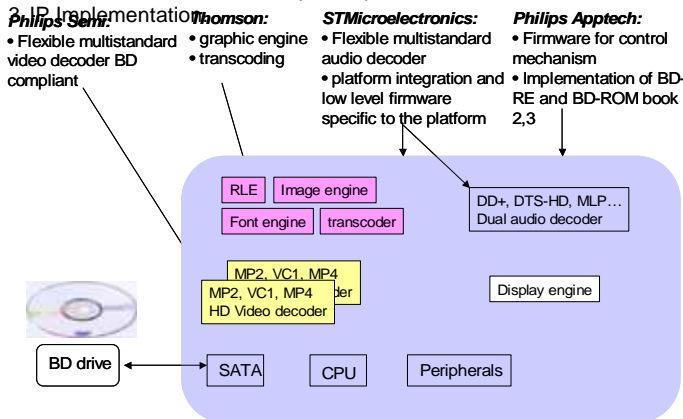
Development of key IP required for Blu-ray terminals and considers both hardware and firmware.

Recent evolutions in SoC design are resulting in an increasing proportion of effort in SoC design going into firmware relative to pure hardware.

The workpackage is divided in two sub-groups:

WP 2A: Source Decoding IC H/W & associated Firmware development

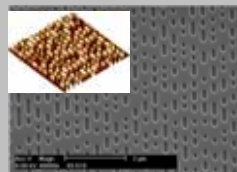
1. Development of IP Requirements and Specifications.
2. Provision of firmware development platforms.



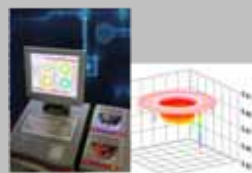
WP 2B: Development of Media and Test equipment.

Main tasks:

1. Technology for media production
2. Full set of test equipment for testing the media



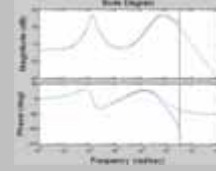
Philips OM&T: physical dimensions of a BD-ROM disc (SEM and AFM)



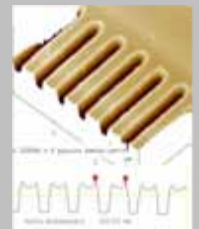
DaTARIUS: DaTABANK testing platform to analyze BD discs and stampers



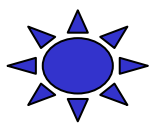
Philips AppTech: user interface of Write Strategy application (Pit O'Resc)



INPG: simulation of dynamic behavior optical disc focus control



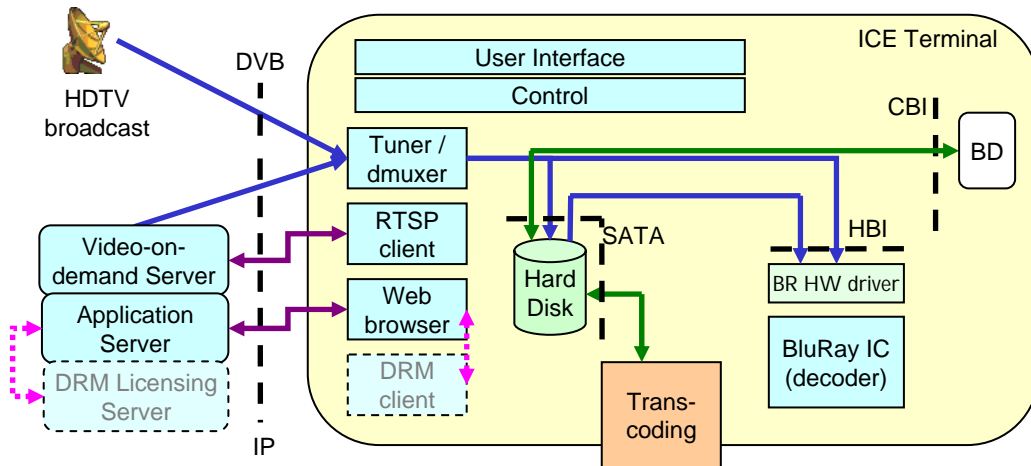
Leti/MPO: micro-structures with new phase-transition mastering material



Work package 3: Applications

This work package is addressing the application development allowing the ICE terminal to acquire HD content with PVR functionalities, through broadcast & broadband services. The work package has three subjects:

- Video on Demand application.
- Broadcast applications.
- Integration with ICE terminal.



The figure shows the architecture of the application side. The ICE terminal will have the functionality of an advanced Set-top-box, with capability of receiving both broadcast HDTV and interactive on-demand content.

Work package 4: Validation & Demonstrators

The main goal of this work package is to elaborate during the project, a set of demonstrators allowing partners to validate concepts and achievements step by step.

This work-package has two tasks:

- 1- Specifications & scenarios.
- 2- Validations & demonstrators.

We plan to provide demonstrators in Q1 of each year, allowing to show & validate the ultimate project achievements.

