IP use for space applications

Nicolas RENAUD
Experience

AT697E LEON2-FT processor

- Use of LEON2-FT Sparc V8 IP
- PCI to AMBA interface

Some IP related issues during the AT697E development

- Various bug corrections (cores & test benches)
- Hard to debug, no description of the test benches content
- Support
- Simulation results varying with the synthesis flow (X propagation)

Non ESA IP implemented by our customers on some ASICs

- ADV/Transswitch 1553 BC/RT hard IP
Soft IPs very useful for “simple” functions

- Communication protocols, EDAC...
- Can be customized
- Reuse
- Differentiation
- But, often, doesn’t match the user needs

Hard blocks more suited for complex functions

- Processor, signal processing
- IP validated once and for all, specified and guaranteed
- Design simplified for customers, which can focus on their applications
- Shorter and controlled design cycle time
- Reduced risk of redesign
The re-use strategy is a must with thinner technologies

IP vendors and ASICs manufacturers can help, but...

- See previous slides...

In space applications, for complex blocks, functional commonalities between multiple users is very unlikely...

Therefore, this strategy can be implemented at the customer side only: it becomes a corporate strategical decision allowing:

- To disseminate the past experiences within the company
- To Focus on real new added value features