

Storage Product Family Architecture

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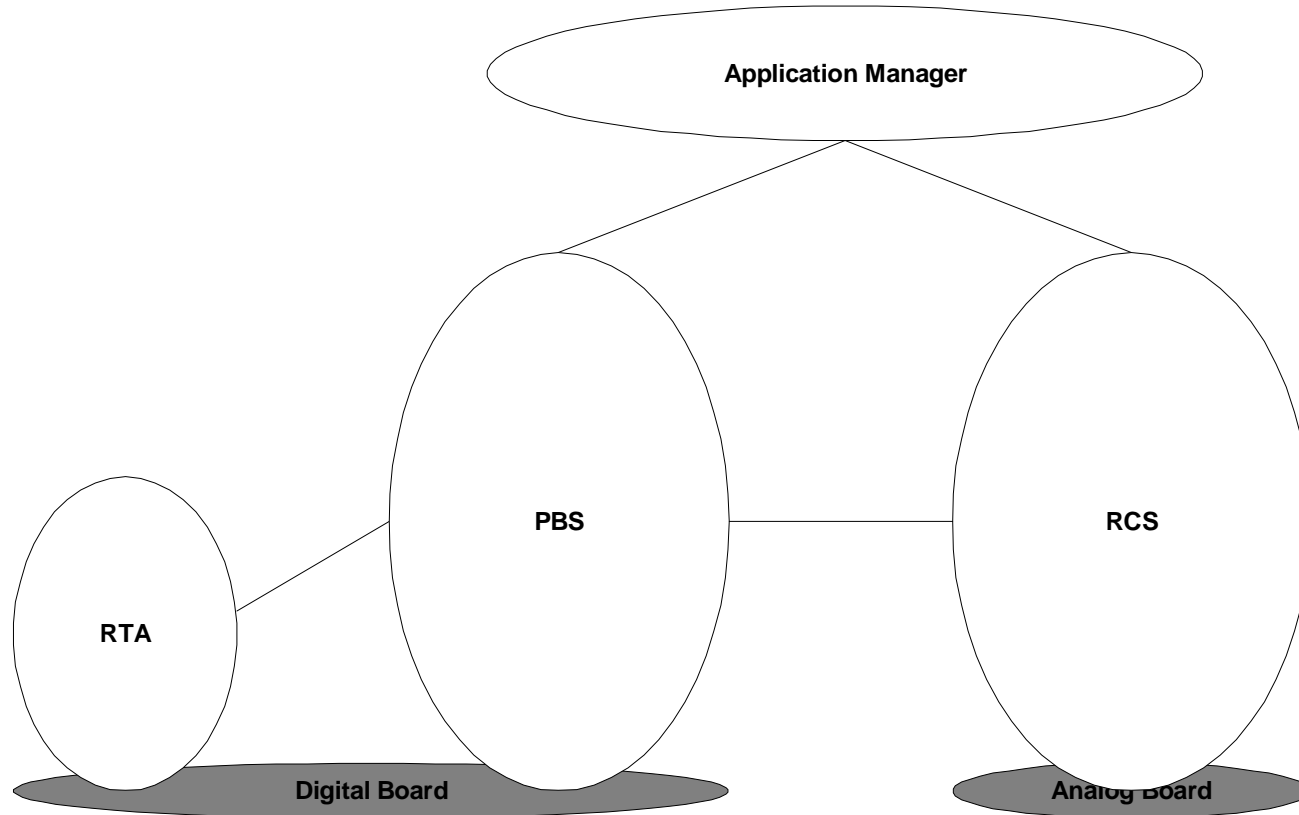
Presentation outline

- Terminology
- Some History
- Some Future
- Conclusions

Terminology

- Product
 - single instance, e.g. DVDR1000
- Product Range
 - e.g. complete range of DVD+RW standalone recorders
- Product Family
 - strongly related product ranges
 - e.g. DVD players, DVD+RW recorders, HDD recorders

RW1 architecture



RW1 architecture

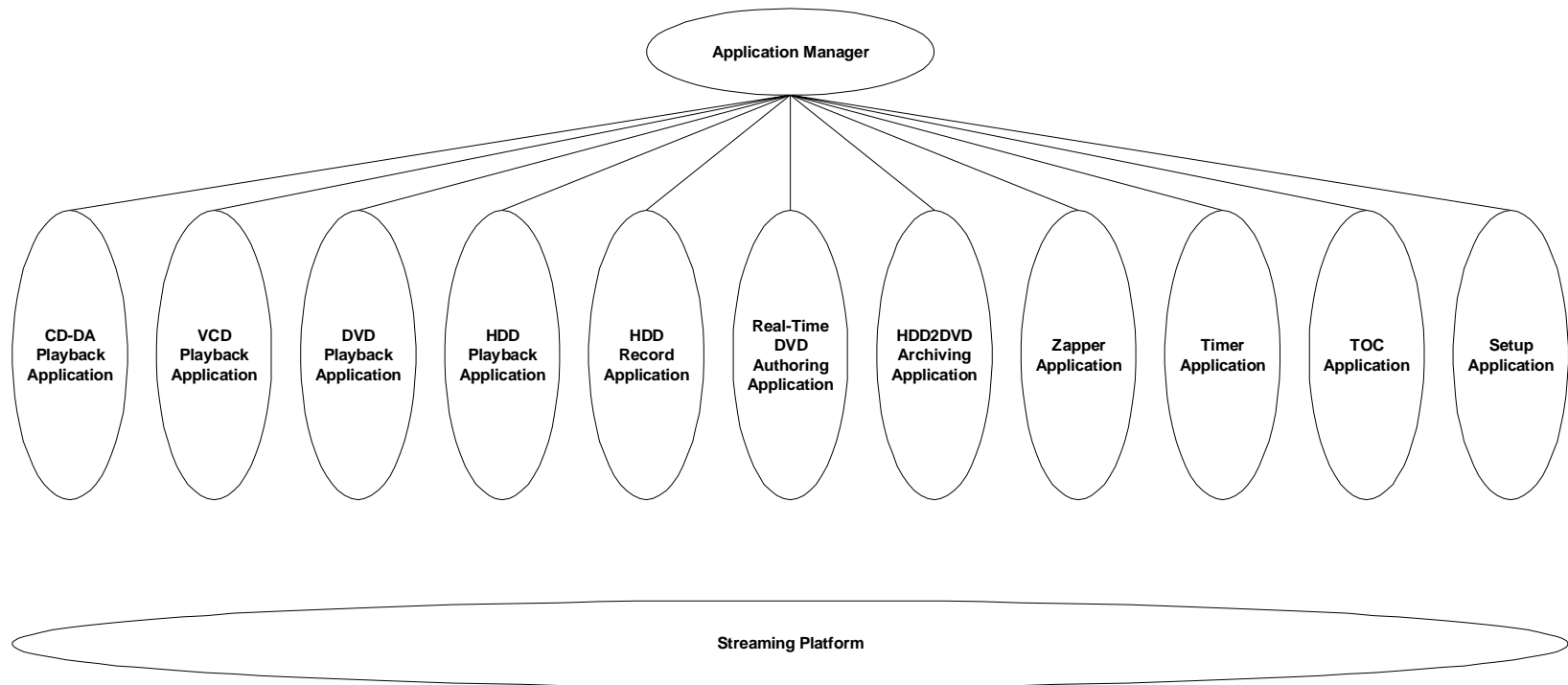
- “one time architecture”
- Time to market most important => how to combine two independent legacy SW stacks?
 - i.e., two independent products
- Legacy system difficult to maintain (already turns out now: maintenance, UI changes, Lead, ...)
- Drift from the originating product ranges

Requirements for RW2

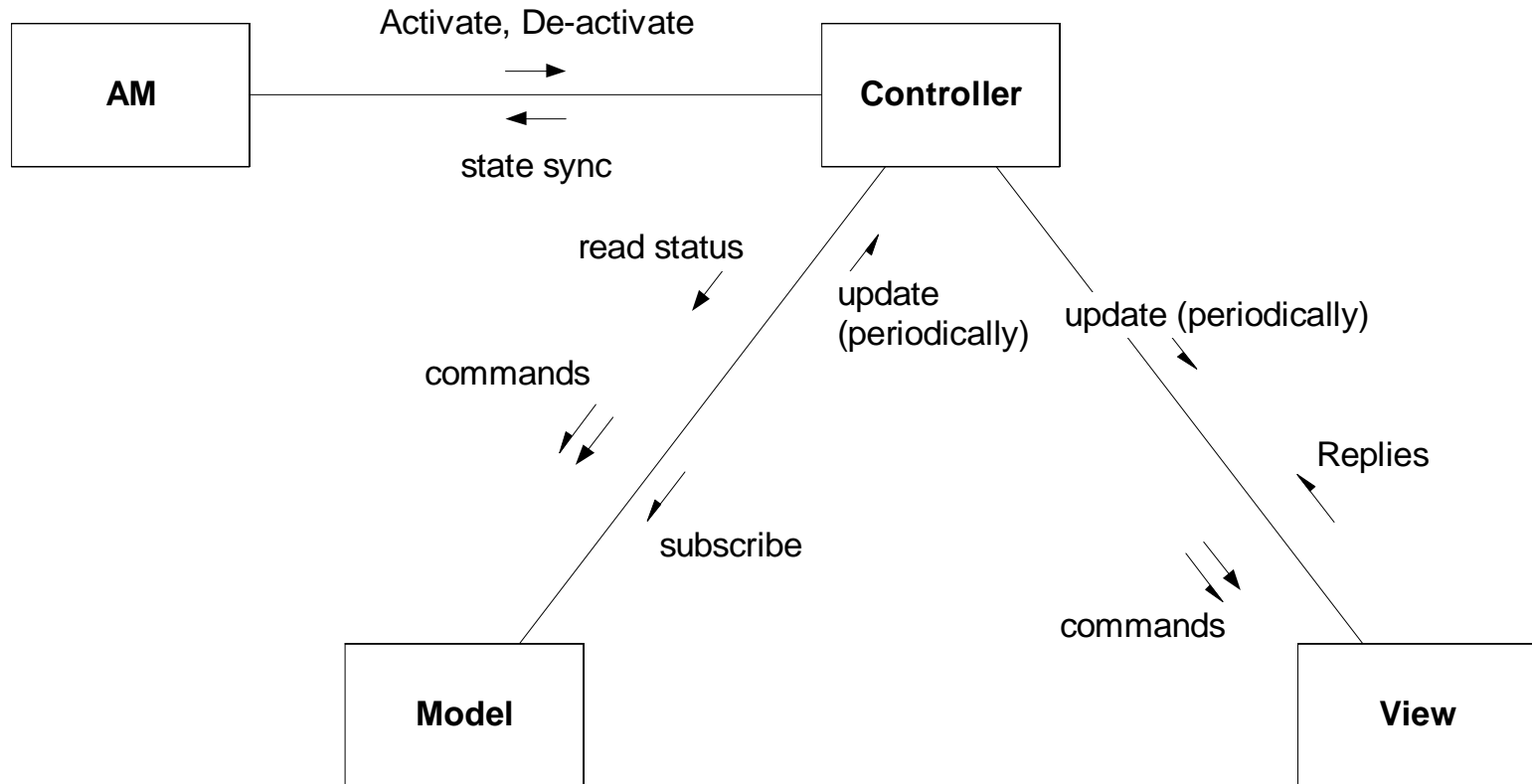
- Business:
 - cost-down of RW1 product
 - new functionality to extend the DVD+RW product range

- Architecture/implementation:
 - support a series of product ranges
 - * i.e., a product family
 - * a.o. DVD, DVD+RW, SA-CD, HDD, combi's, modules)

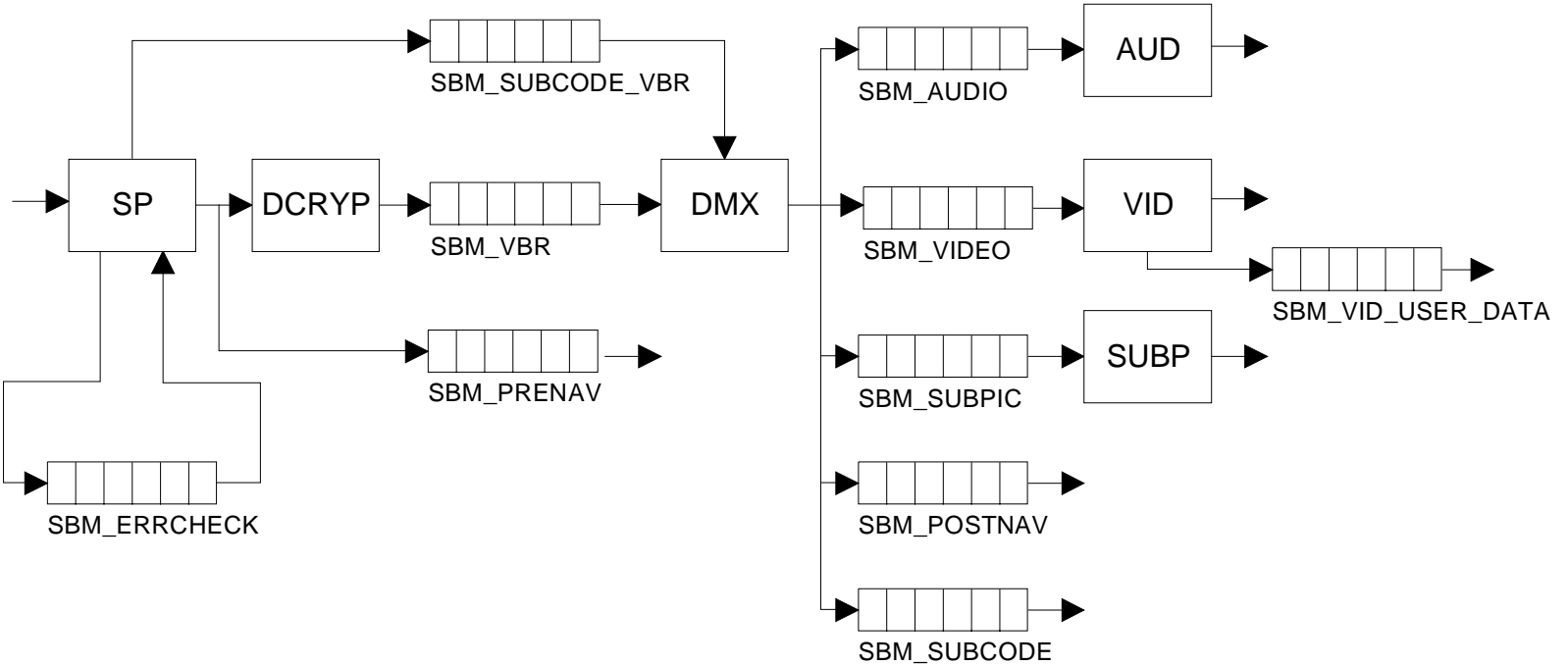
Applications: verticalisation



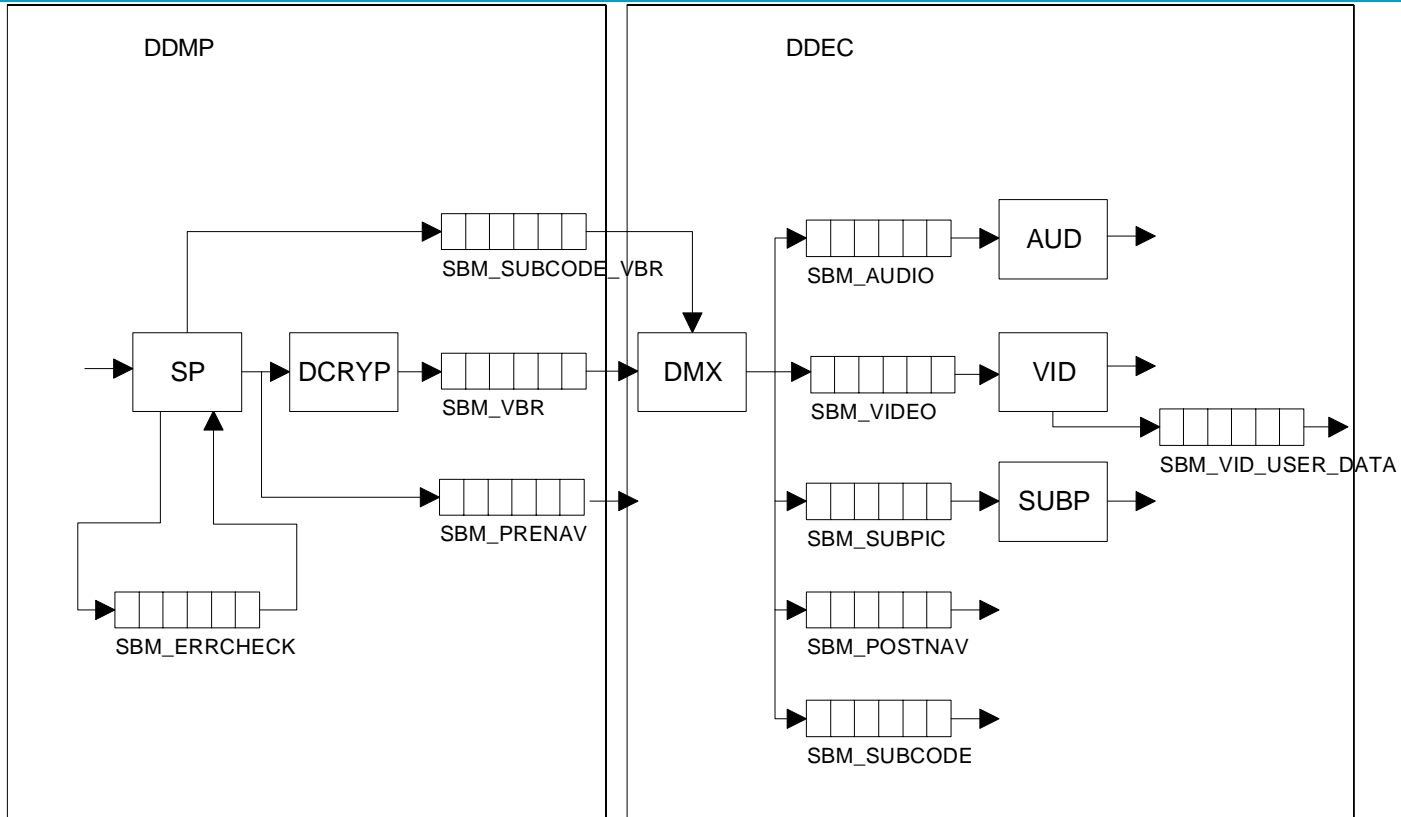
MVC design pattern



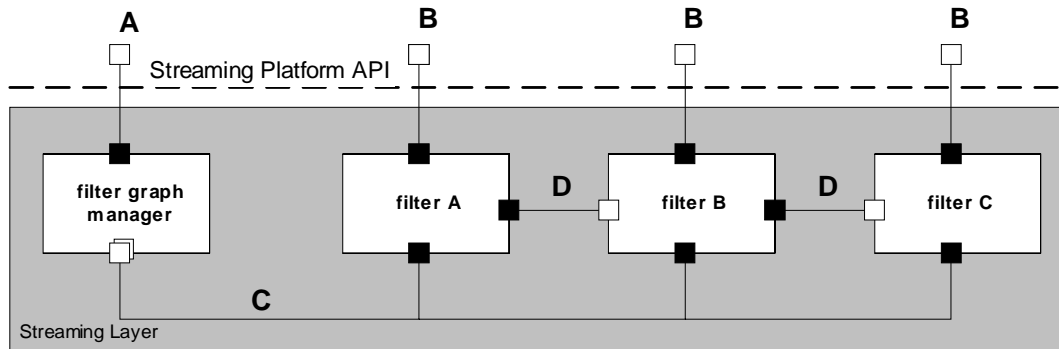
DVD player data path



Filters as Streaming Units

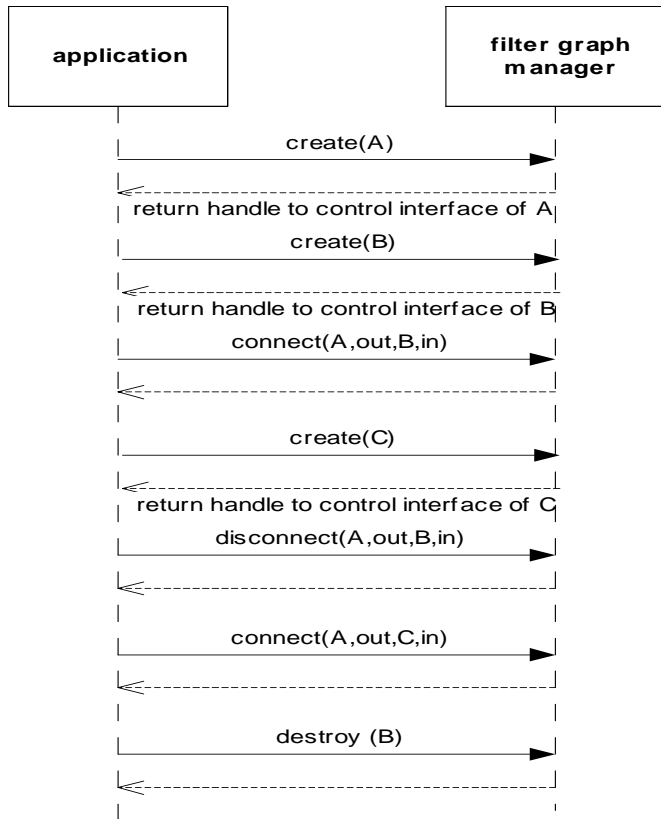


Streaming Platform

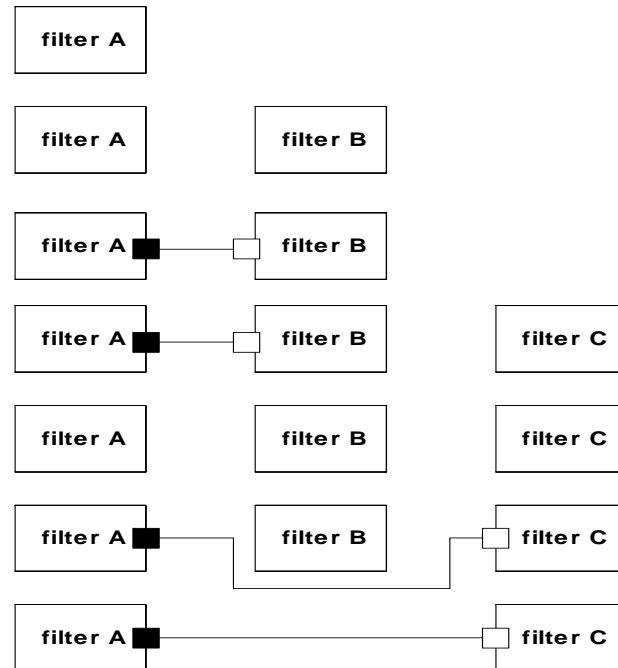


- A* control interface filter graph manager (FGM)
- B* control interfaces filters
- C* control interface FGM to local graph managers (LGM)
- D* streaming connections between filters

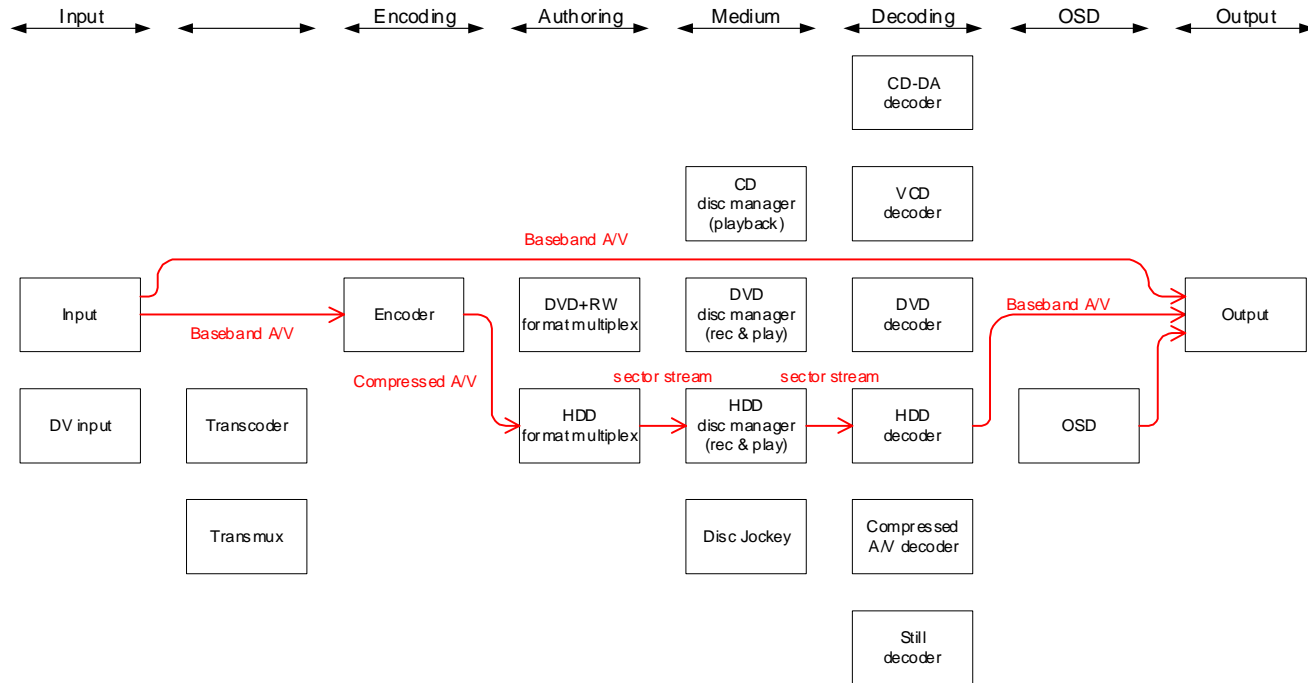
Creating a graph



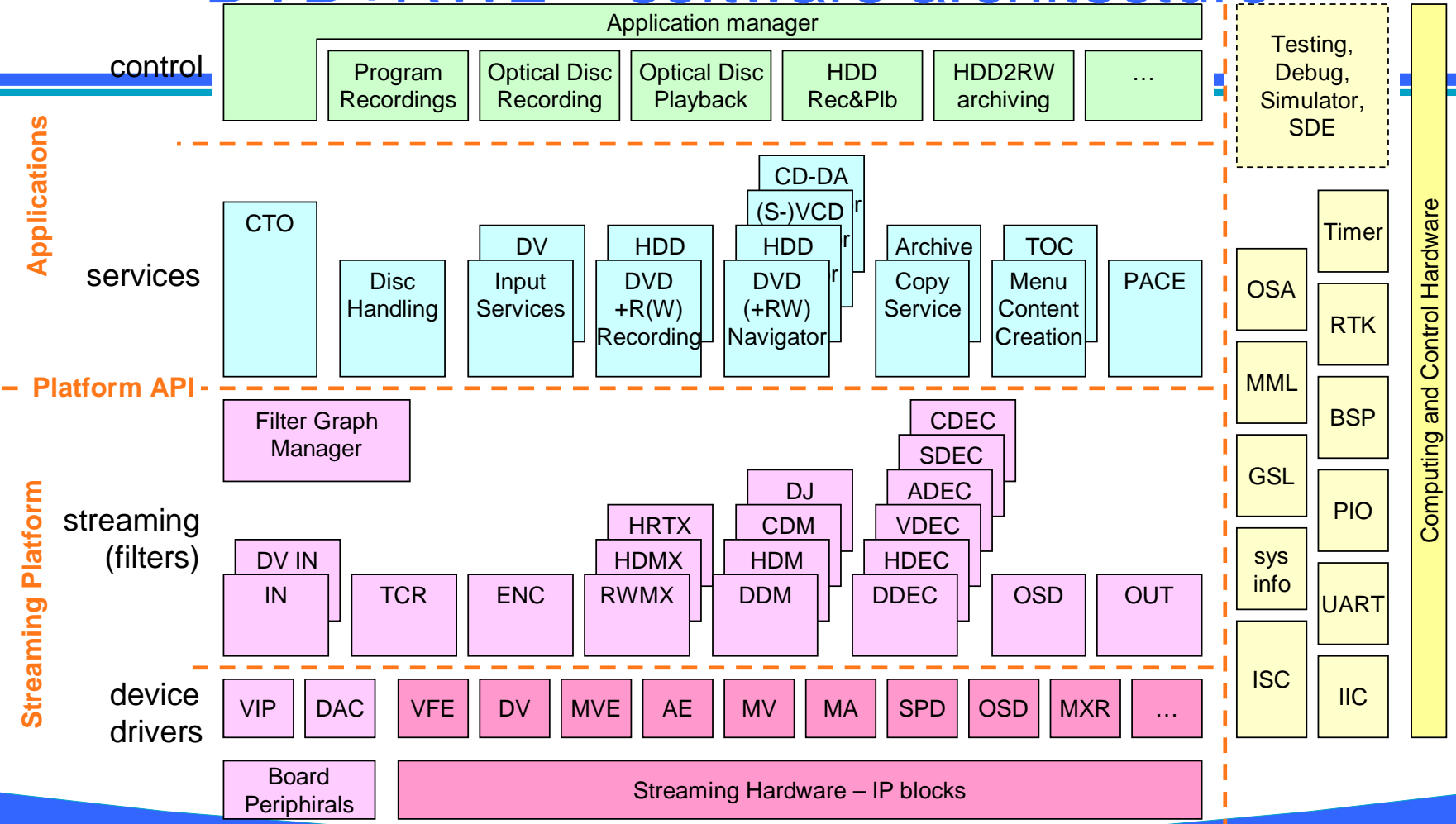
resulting filter graph:



Example: HDD time-shift



DVD+RW2 – software architecture



Conclusions

- RW2 architecture can serve as a product family architecture for storage products because of:
 - Flexible application framework
 - * verticalisation
 - * MVC
 - Flexible streaming platform
 - * HW-independent filter interfaces
 - * services only need to know the filters they need (verticalisation)
 - * flexible filter graph creation