



**VirtuosoMedia**  
*secure digital rights management*

# Flexible DRM

Real-life ODRL Implementations  
By  
VirtuosoMedia



# Content

- Introduction VirtuosoMedia
- General Broker Idea
- What is leading
- Why ODRL
- Implementation
- Remarks



# VirtuosoMedia

- We protect rights-owners' business
- Focus on multimedia (audio, video)
- Open standards
- Multiple platforms
- Our own, small-footprint, players
- Complete end-to-end protection!



# Our Solutions

- Offline professional multimedia protection for “Bouwbox Digitaal”
- Online music solution with “VirTunes”
  - We keep track of the tracks
- Set-top box solution with “Virtiq Technology”
  - Key to paid content





# “Bouwbox Digitaal”

- Subscription based
- Offline content (e.g. CD-ROM or DVD)
- Online retrieval of permissions
- Offline playback
- Retrieve statistical data
- Add new or improved content
- Rights-Management system ready for online (if bandwidth available)





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# VirTunes Music Downloads

“We keep track of the tracks”

- Contract with Buma/Stemra society
- No subscription for consumers
- Online content
- Online retrieval of permissions
- Offline (download) playback
- Statistics via server
- Future: download to other devices





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# **VirtiQ** Technology

- Combined DRM & secure payments
- Subscription and “Impulse”
- Online retrieval of permissions
- Online (streaming) or offline (recorded) playback
- Statistics via server and via STB
- VirtuosoMedia DRM integrated
- Banking approved payment integrated (EMV2)



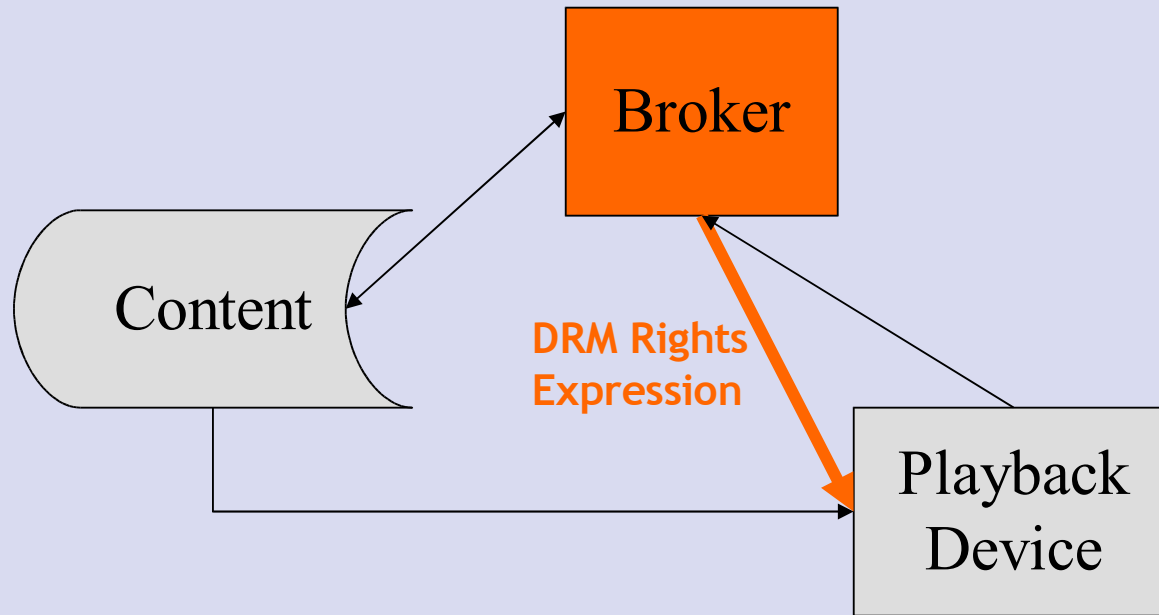
# General Broker Idea I

## Requirements:

- Flexible
- Connectible
- Extendable
- Multiple application areas



# General Broker Idea II





# General Broker Idea III

## DRM Rights Expression

- Permission to playback content
- Where and when
- (Personalised) decryption info
- Conditions (payment, registration)
- Statistics



# What is leading I

## Content

- + Defined
- + Traceable
- Lot of redundant information
- Not adequate as Normalized key

## Consumer

- Integrity problem
- Redundant information
- + Traceable



# What is leading II

## New entity: Contract

- Permission
- Where and When
- Conditions
- Identification



# What is leading III

Contract can be combined with Content  
Consumer agrees to a Contract and  
obtains a Personalised  
Agreement

Datamodel is:

- More natural
- Easy to maintain
- Less redundant information



# Why ODRL

- Basic idea is the same
- Open, and thus more applications (hopefully)
- Fits with our idea of rights holders as separate entities (e.g. music societies)
- Extendable
- Faster ‘time to market’



# Implementation I

Define Building blocks, to create:

- Assets
- Contracts or Offers
- Agreements
- Parties



# Implementation II

## ‘Bouwbox Digitaal’ Contract

- Subscription based (Time restrictions, renewal)
- Titles
- Other Restrictions
  - Maximum number of playback
  - Maximum number of titles to play
  - Etc.



# Implementation II

## VirTunes Music Download

- Define some Contracts
- Couple requested track on the fly to contract
- If all requirements are met (registration, payment etc.) create personalised Agreement and sent this to Consumer



# Implementation III

Virtiq Technology is a combination of previous solutions, plus:

- hardware ID for authentication
- integrated banking system for payment



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# Conclusion

VirtuosoMedia  
plays it safe  
with  
ODRL!