



# *Security measures: how to protect against movie piracy ?*

*Impact for exhibitors*

*Xavier Verians*

*Octalis SA*

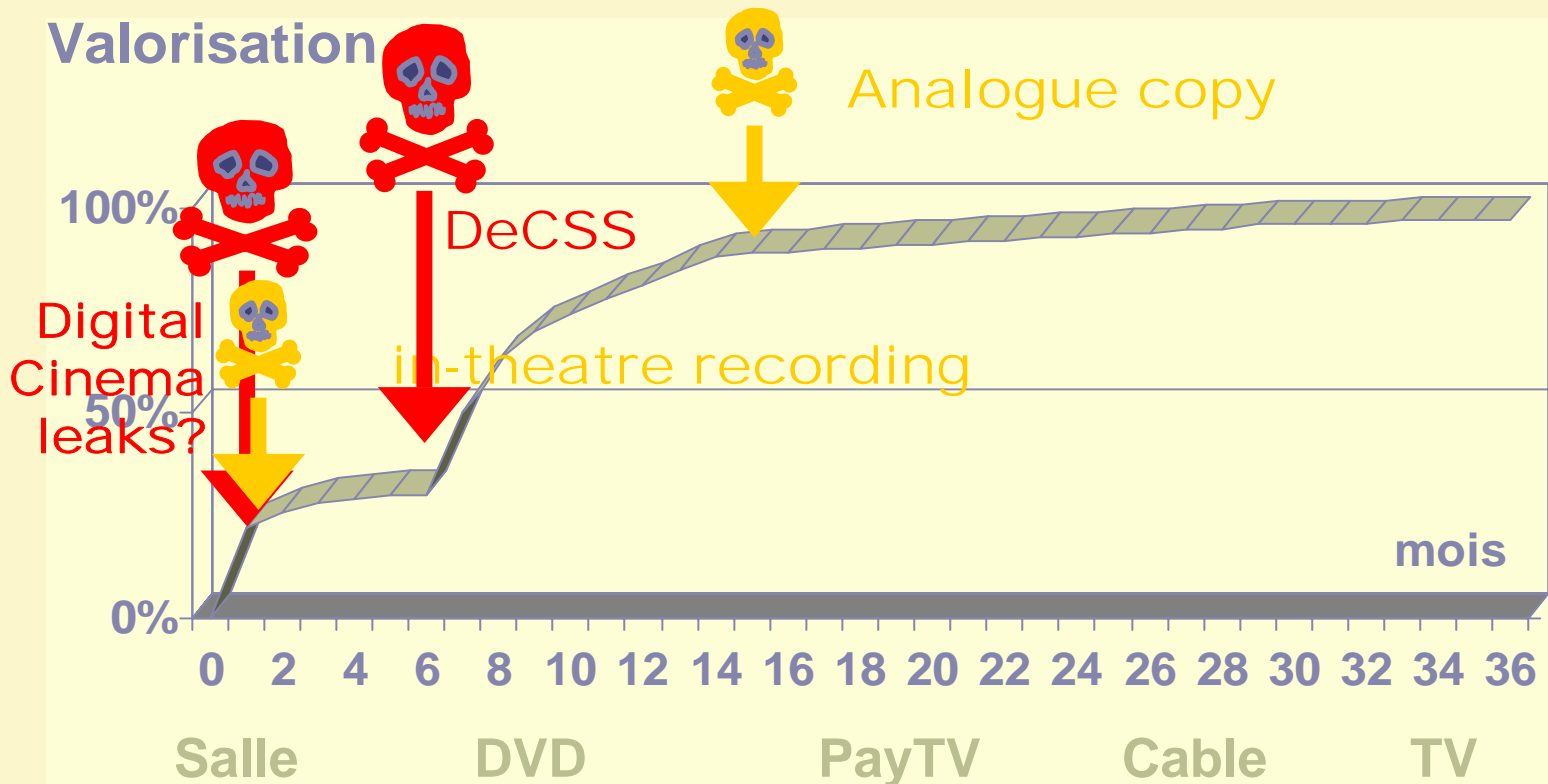
*DigiTraining Plus - Mediasalles*

*March 2005*



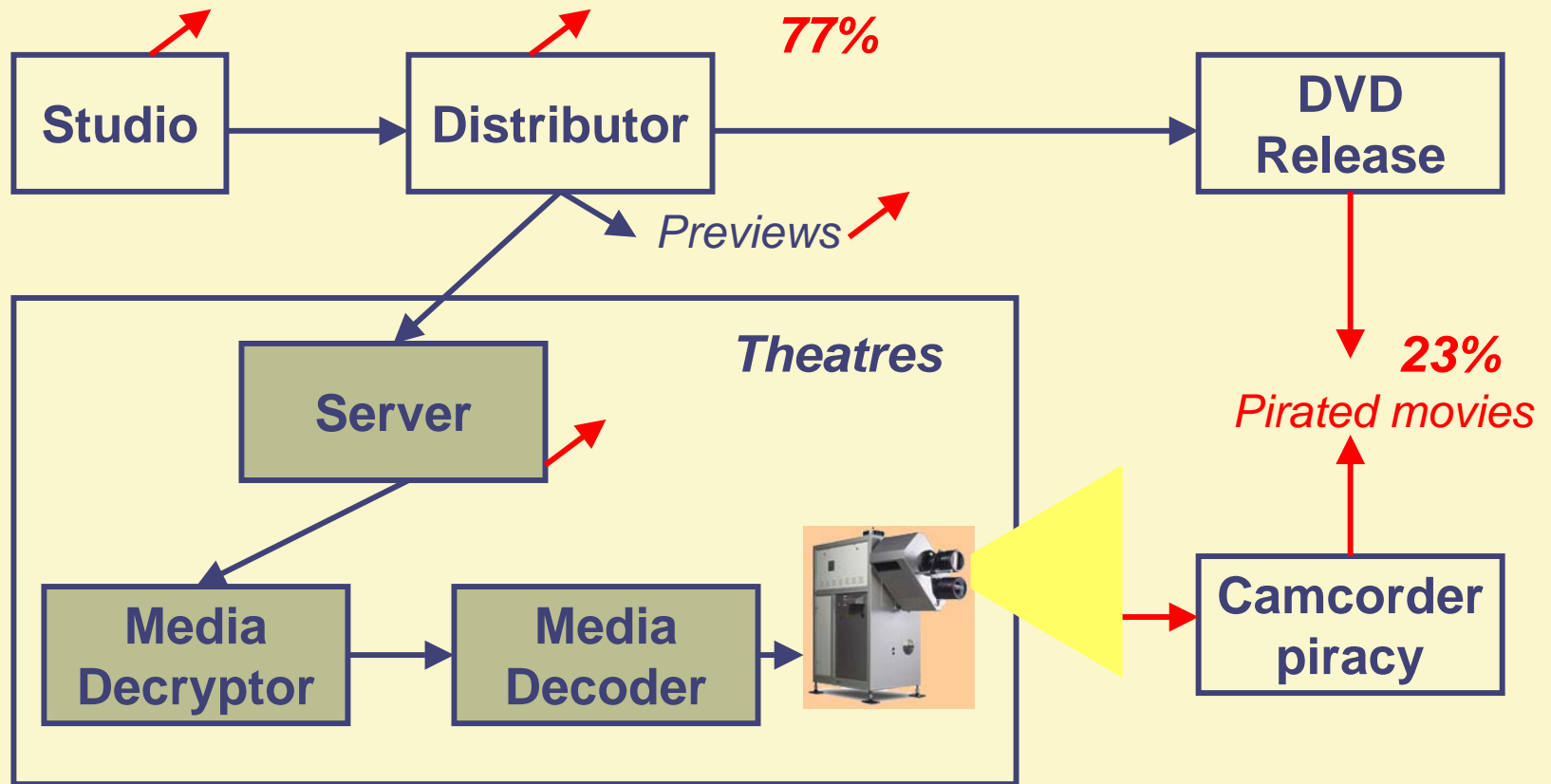
- **Provide content protection & transfer solutions for professional audiovisual applications**
- **Markets:**
  - Digital Cinema
  - Professional Broadcast
  - Broadband, home networks
- **First to demonstrate security in d-cinema**
- **Presence in EU and US**
- **Work with DCI – EDCF security group**

# Piracy in the movie lifetime



From Marc Herubel – DiGITIP (FR)

# Piracy sources



Figures from Marc Herubel – DiGITIP (FR)

# Three types of system security

- ***Internal:***

- Technology (encryption, tamper-proofing, ...)

- ***External:***

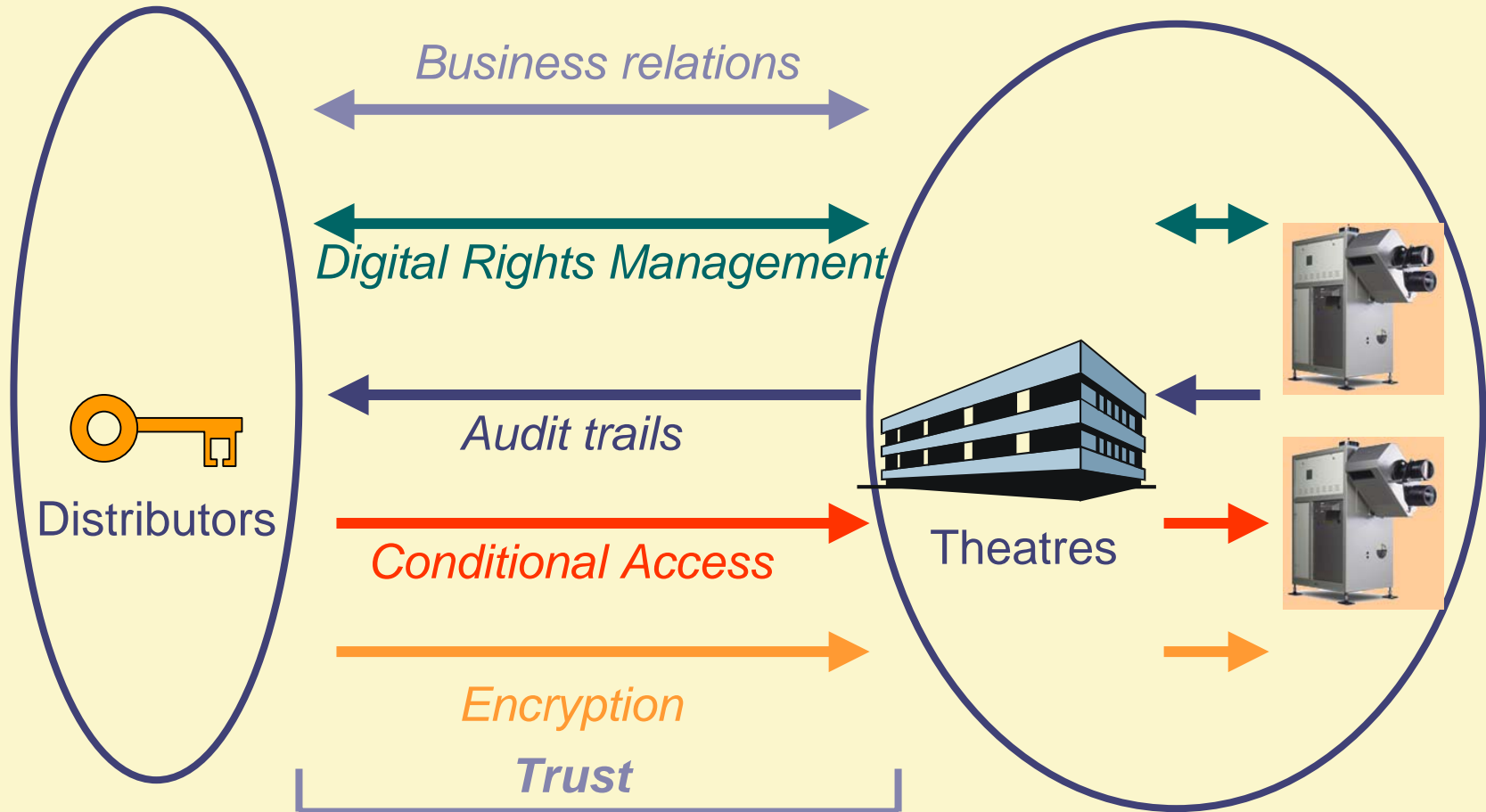
- Physical protection of the system environment

- ***Legal / social:***

- Laws and social pressure keeps people honest
- Laws allows to suit and sentence hackers

# ***Internal protection***

# Layered security system



# Respect of business rules

## ■ ***Good Conditional Access system:***

*shall support*

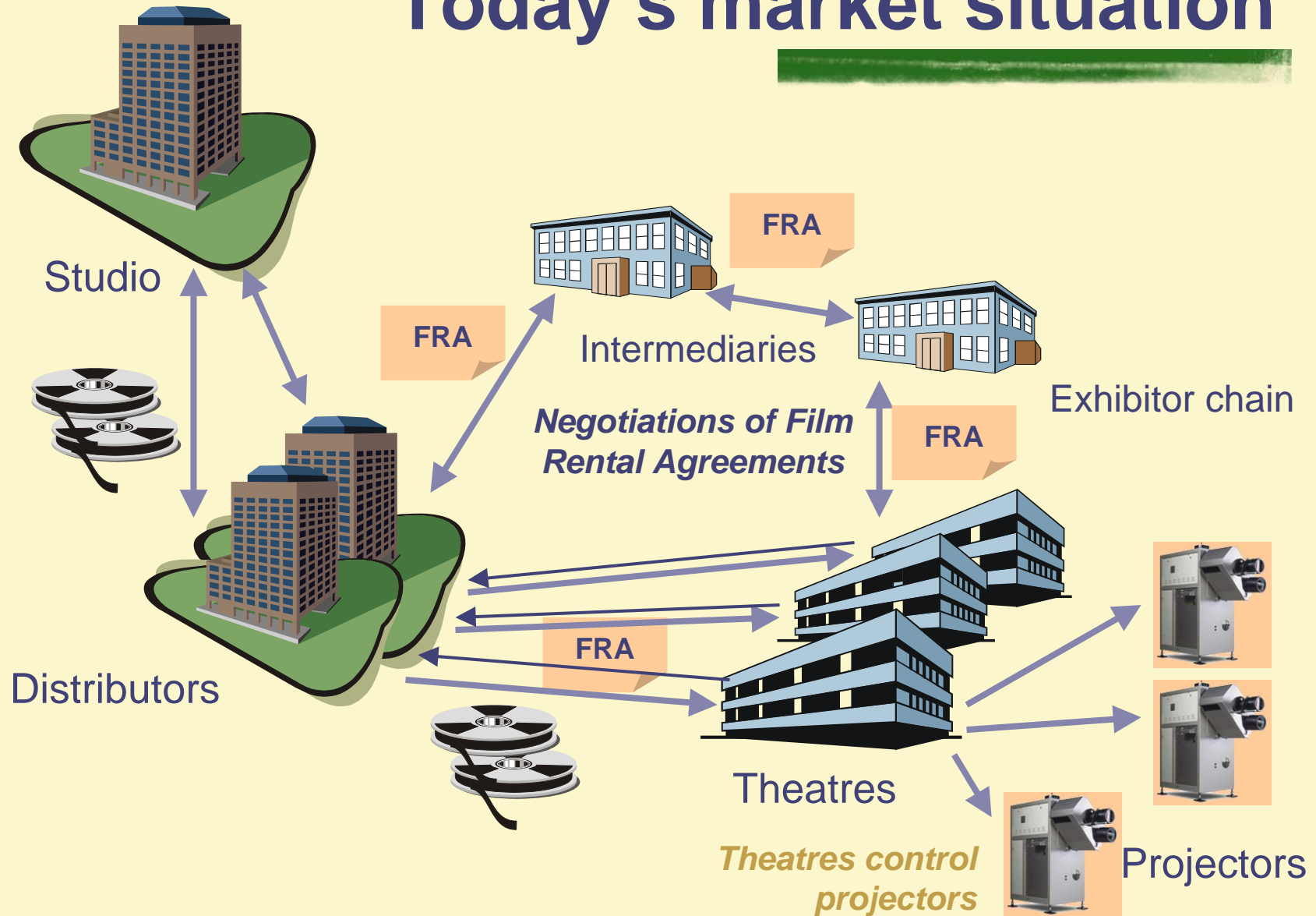
*current business rules*

*and evolve with the market*

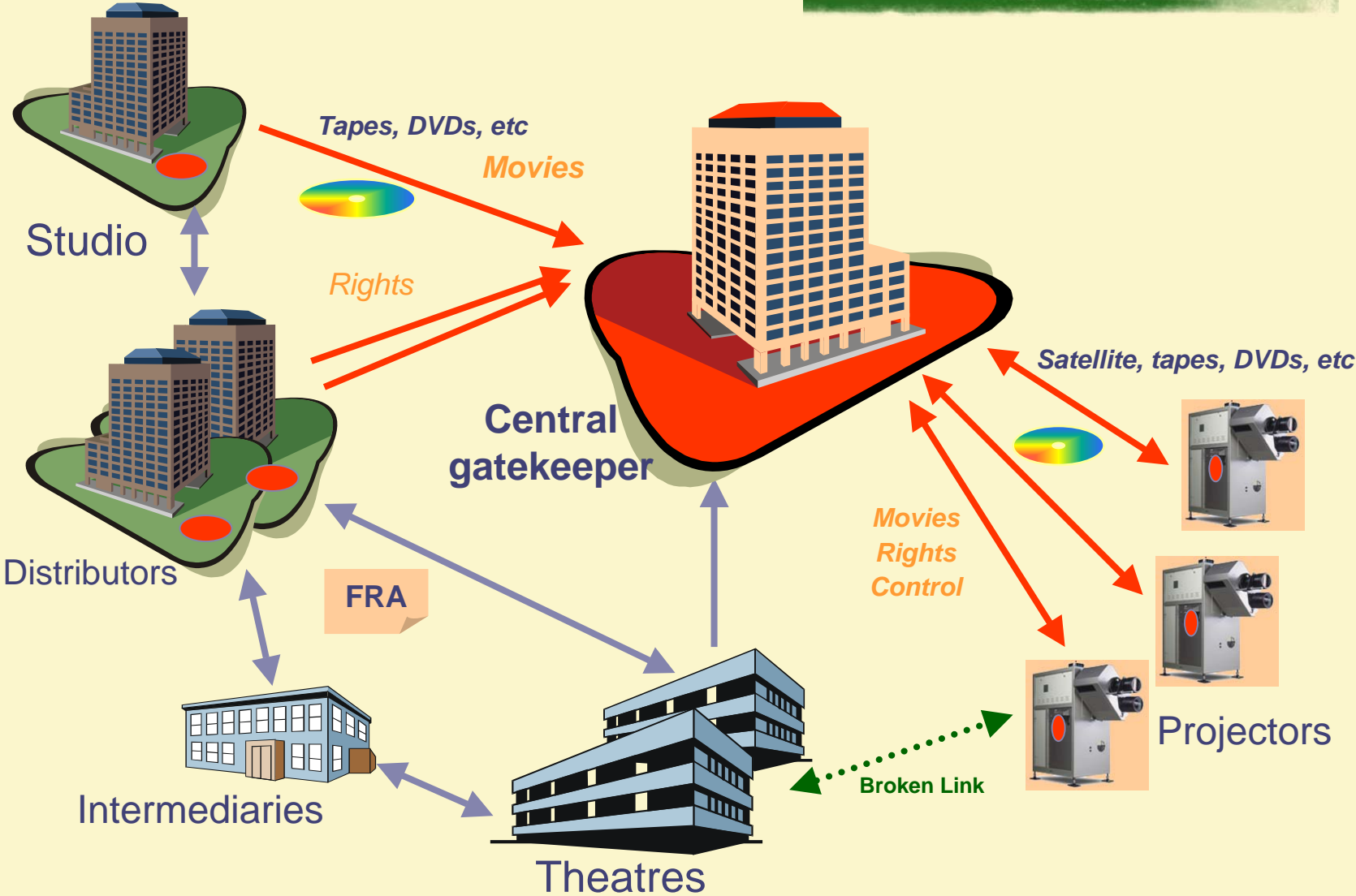
Otherwise misuse can lead to security breaches!



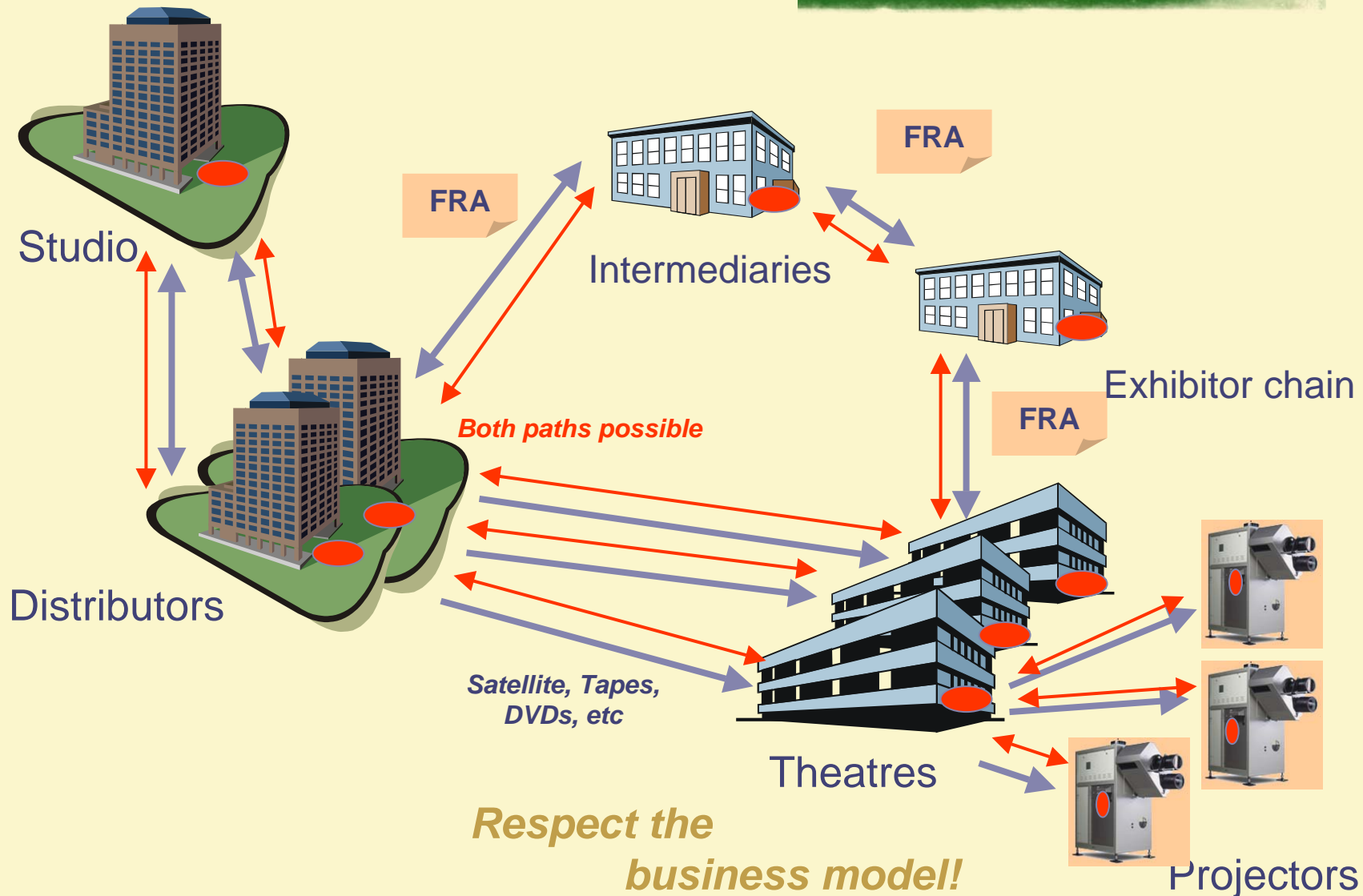
# Today's market situation



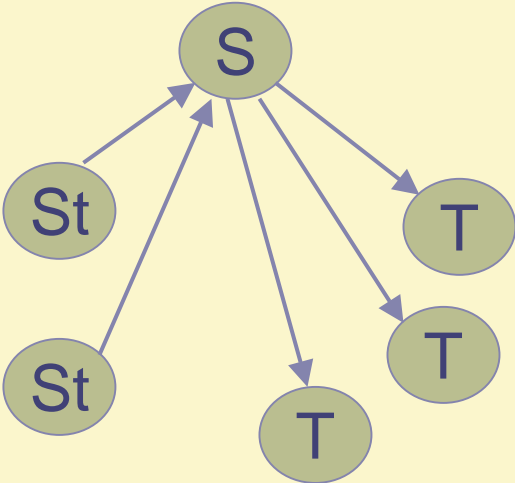
# Classical security approach



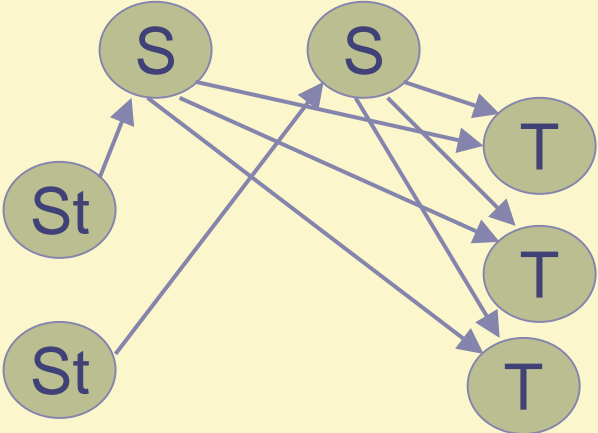
# Octalis' Decentralised DRM solution



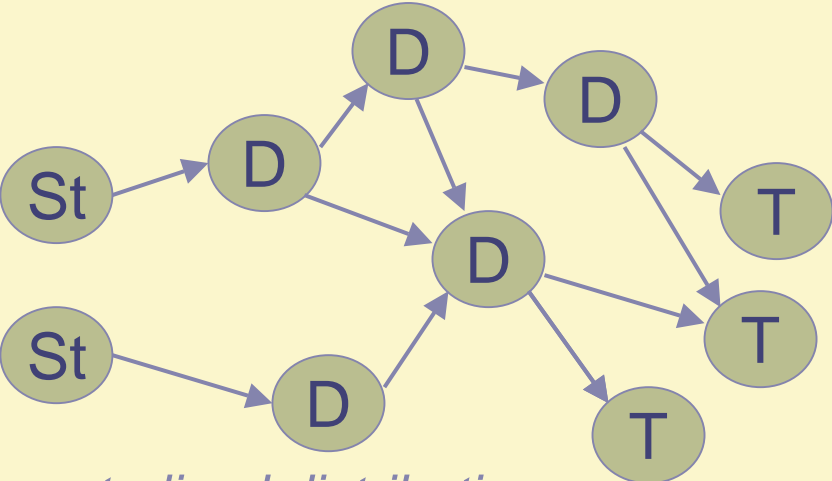
# Some possible topologies for rights distribution



*Centralised management*



*One service company per studio*



*Decentralised distribution*

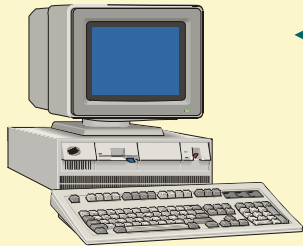
- St** Studio
- D** Distributor
- T** Theatre
- S** Service company

*Or any other combination...*

# In the theatre

*Direct communications or through intermediaries (example: local distributors)*

**Studio/  
Distributor**



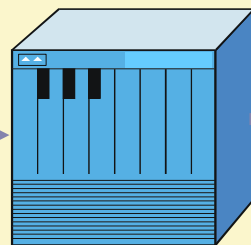
**Movie  
package**

**Theatre**

*Rights and  
constraints*

*Direct or indirect*

**Audit logs**



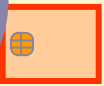
**Theatre  
Server**

Octalis S

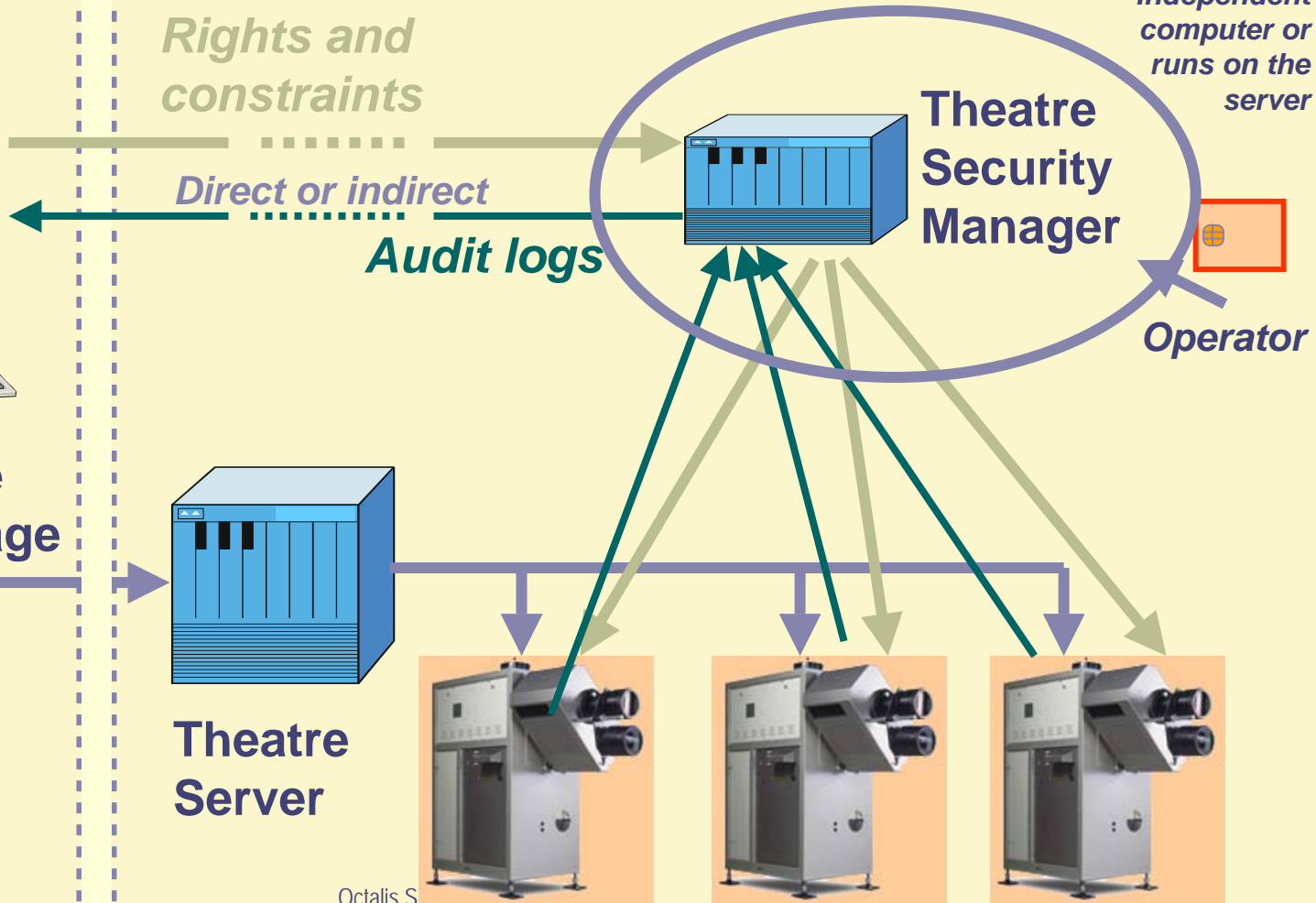


**Theatre  
Security  
Manager**

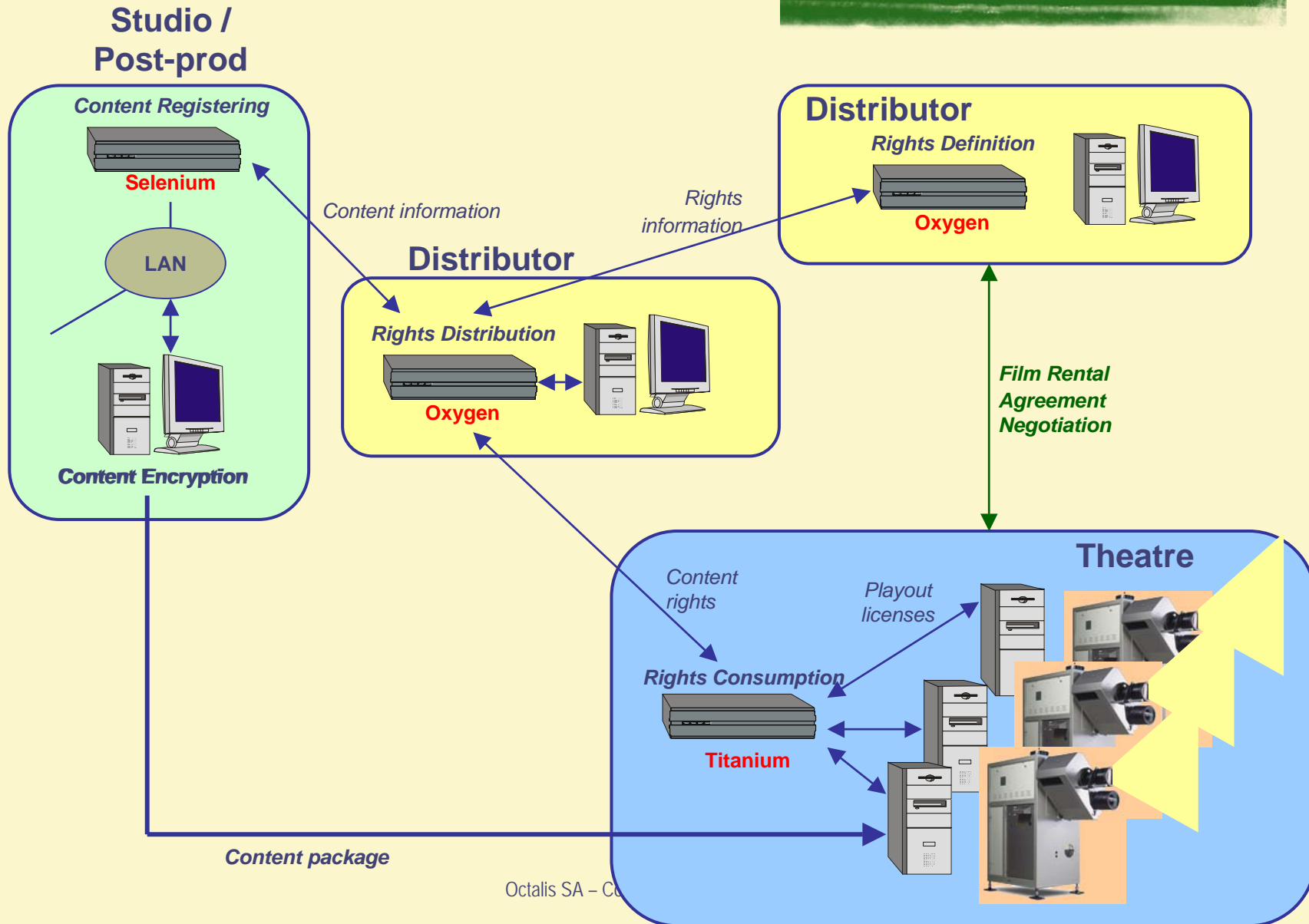
*Independent  
computer or  
runs on the  
server*



**Operator**



# Octalis Digital Cinema solution



# Impact of internal security

- **Need for a license to project the movie**
- **Audits are collected by may only be due if something "strange" happens**
- **Increased risks of dependence to a distributor / a third party**
  - *if this party controls the distribution of rights*
- **Regarding daily operations:**
  - No impact in well-designed systems
- **Trust management**

# ***External protection***



# Physical protection

- **Military-grade security too expensive**
- **Possibility to replace some internal security by external security measures**
  - Tamper-proof rack
  - Guards,
  - Locked booth,
  - Surveillance cameras, etc.
- **Access control**

# ***Legal / Social protection***

# Legal/social protection

- **Need to provide forensic information**
  - Logging / audits
    - Automated or on court request?
  - Watermarking / fingerprinting
    - To locate source of piracy
  - External control
    - Adequation equipment used / database of equipments

# Watermarking / fingerprinting

- = Embedding invisible but detectable information in the movie
- Purpose: to identify
  - *(who distributed the movie)*
  - *Location of the projection*
  - *Who triggered the projection*
- Other useful forensic or tracing information.

# Conclusion: Impact for exhibitors

## ■ Managers:

- Management of devices and employees
- Management of external security
- Camcorder detection

## ■ Operators:

- No specific competences regarding security
- Passwords/smart cards
- Verifying availability of licenses at scheduling
- More options in scheduling
- Increased hacking temptation

# Conclusions

**The security system can help exhibition business provided it is flexible enough to avoid hampering usual business usages.**

**Security is not synonyms of constraints.**

***Flexible and balanced security systems exist.***

- **Protecting your rights and revenues through flexible solutions**



For more information:  
Xavier Verians  
[verians@octalis.com](mailto:verians@octalis.com)  
[www.octalis.com](http://www.octalis.com)