

DAVIC European Info Day

DAVIC Metadata

Review of the activities in the
DAVIC Metadata AHG

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TV-Anytime & TV-Anywhere

- Including e.g. Broadcasting, Local Storage and Internet Access
- Advertising, Electronic Programme Guides, web pages
 - ⇒ Take/get it if/when available (independently of its location in time and space), when you want ...
 - ⇒ or search and retrieve it !
- User initiative or intelligent agent processing
- And also navigation inside the content, e.g.
 - ⇒ segment jumping, object selection (see MPEG-7)

Elements of a Metadata System

○ Metadata is a fully integrated system which can be divided into:

⇒ the metadata information;

⇒ the metadata schema;

⇒ the metadata authoring mechanisms;

⇒ the metadata language;

⇒ the metadata packaging and transport mechanisms;

⇒ the metadata processing tools including APIs.

DAVIC Now:

Metadata descriptors and schema

- What will the user be looking for?
- What will the system need to fulfill user requests?
- Descriptors
 - ⇒ from the Unique Identifiers & locators with basic descriptive information
 - ⇒ to the full attractors
- Schema: metadata structure, organisation of the descriptors
 - ⇒ hierarchy and inheritance tree dependent of the content structure

Categories of Descriptors

- Identifiers (e.g Unique Identifier)
- Locators (ensure that the request is fulfilled)
- Attractors
 - ⇒ Basic mandatory information (e.g. name, size)
 - ⇒ Why should I access this content?
*Good mapping with the SMPTE categories
(also part of the DAVIC legacy)*
- Access, Transaction & Protection
- Segmentation
- Object description
- Locally generated (automatically or not) Metadata (e.g. tracing, customisation)

DAVIC DRAFT REFERENCE MODEL

USER

Profile/preferences

Configuration requirements

Selection

Custom metadata

SERVICE PROVIDER

and possibly other chain roles inc. the user

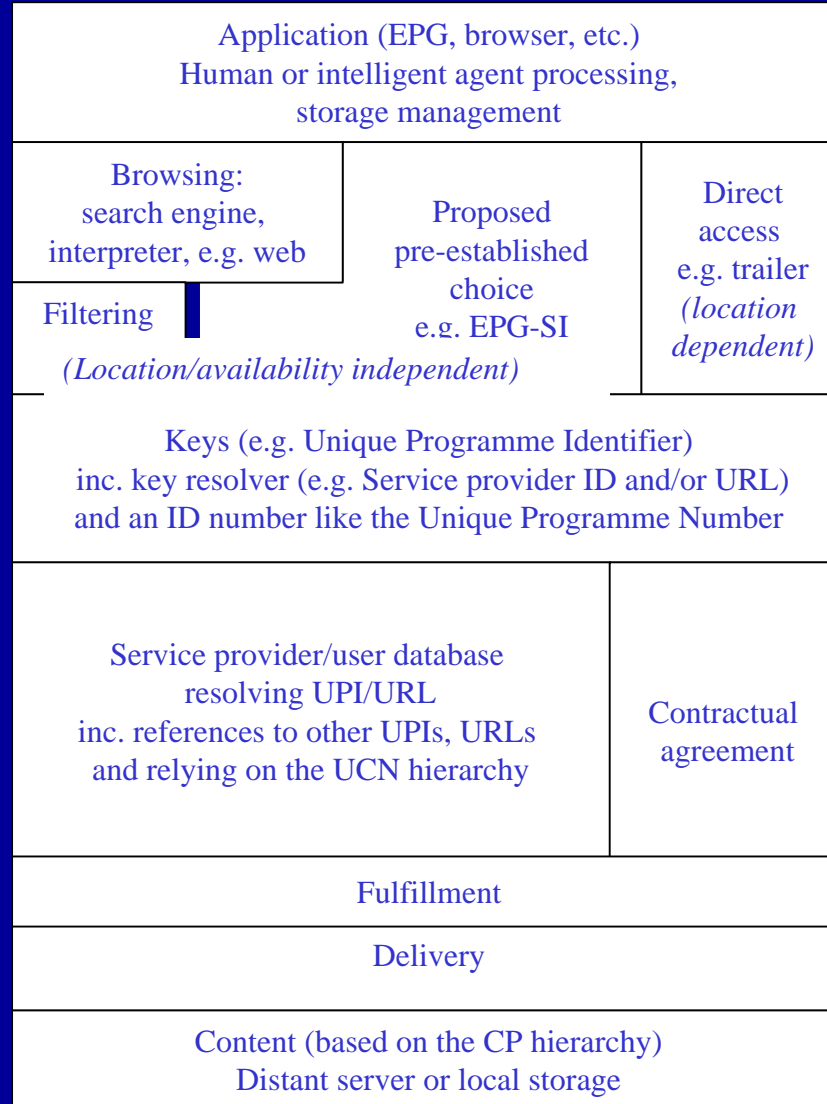
Attractors mgt

UPI/URL resolving

Access right

CONTENT PROVIDER

can also be the Service Provider (rights owner) or the user



*User profile/keywords,
locally generated
metadata*

*Filtered Metadata
(attractors
inc. time, duration,
non-essential metadata)*

*UPI:
SP ID/URL + UPN*

*UPI -> resolving process:
1 or more URLs
and / or UPIs
and/or UCNs*

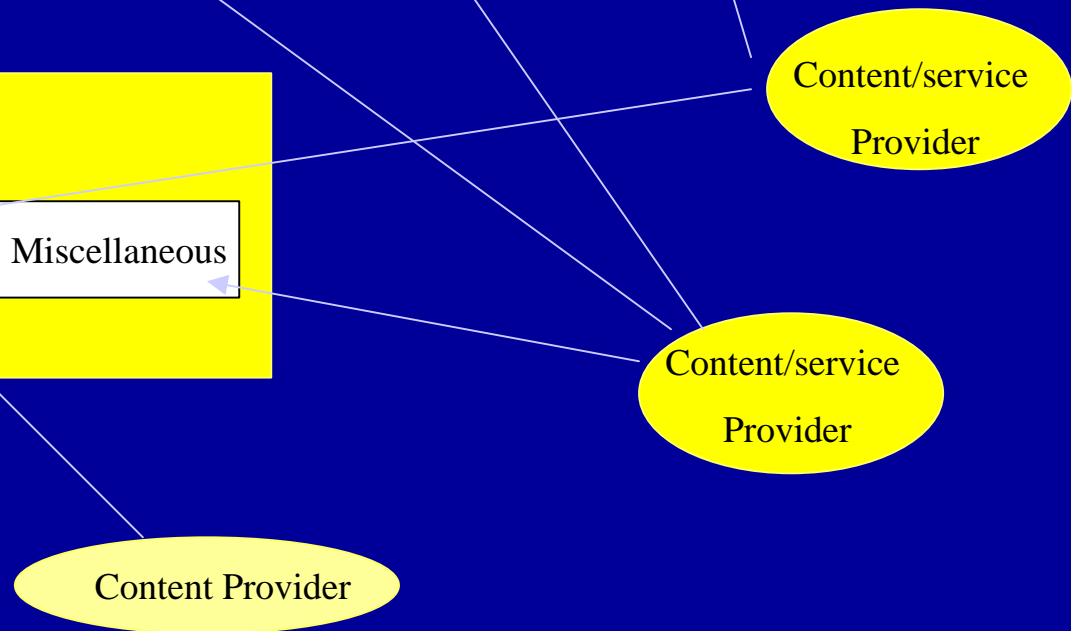
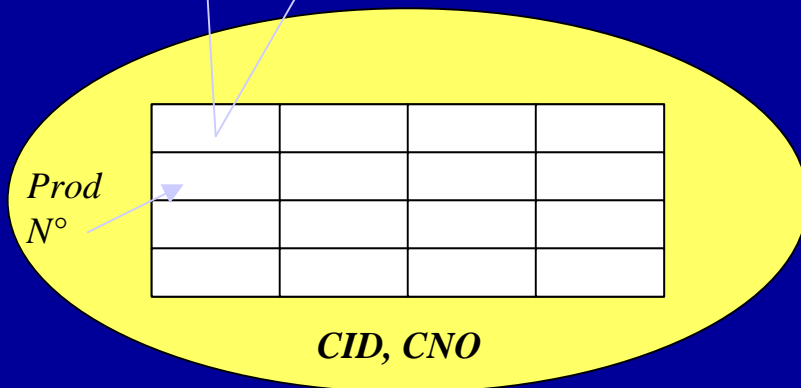
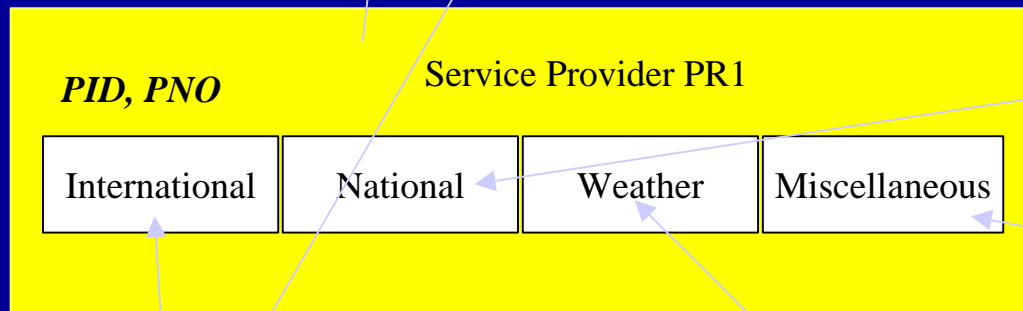
*Copyright and security
metadata*

Delivery metadata

*Production metadata
on core or version*

Example of programme composition: distributed metadata

NEWS	International	National	Weather	Miscellaneous
TV Today	Generic Programme UPI or component UPIs			
Web Today	UPIi	UPIj	UPIk	UPIix



A Hierarchical System and the Use of Unique Identifiers & Locators

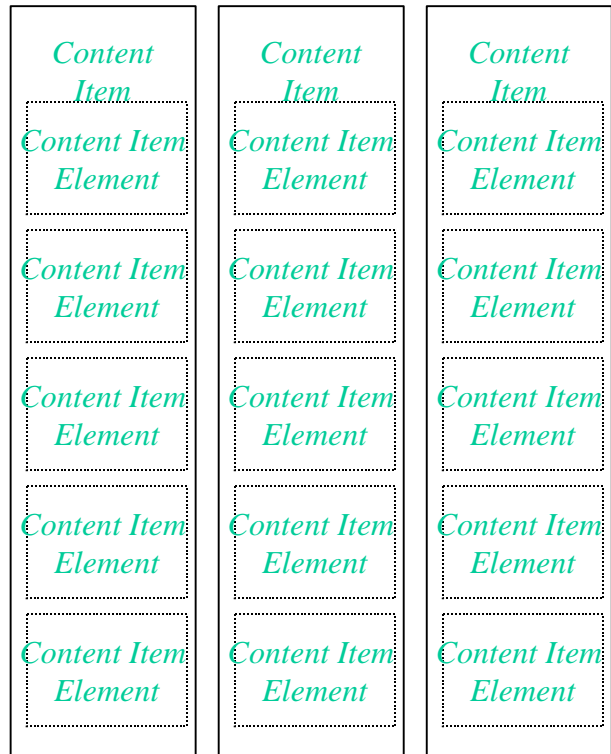
CONTENT / SERVICE PROVIDER ENVIRONMENT

Hierarchical Content Structure



Hierarchical Unique
Content Numbering
(UCN)

Content Package



External links

UCN/CP1

UCN-CP1/CIi

UCN-CP1/CIj

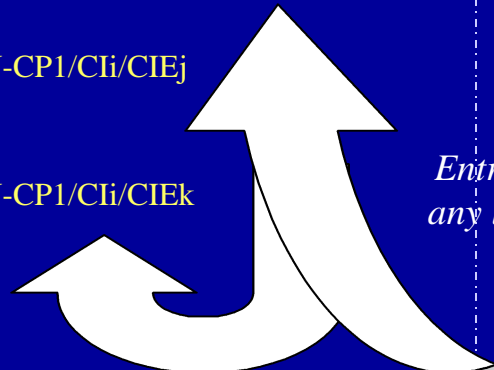
UCN-CP1/CIi/CIEi

...

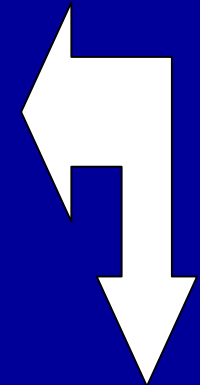
UCN-CP1/CIi/CIEj

UCN-CP1/CIi/CIEk

*Entry at
any level*

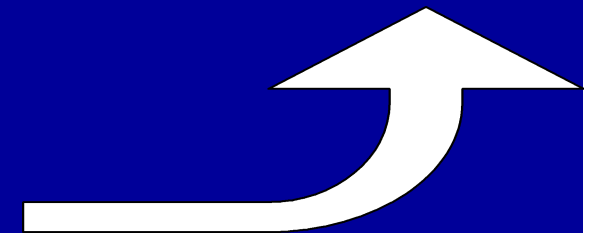


URL resolver



Unique Programme
Identifier (UPI)

List of associated UPIs / URLs



Schema - DAVIC approach

○Categories

⇒Content Package

⇒Content Item

⇒Content Item Element

⇒Content Item Element Segment

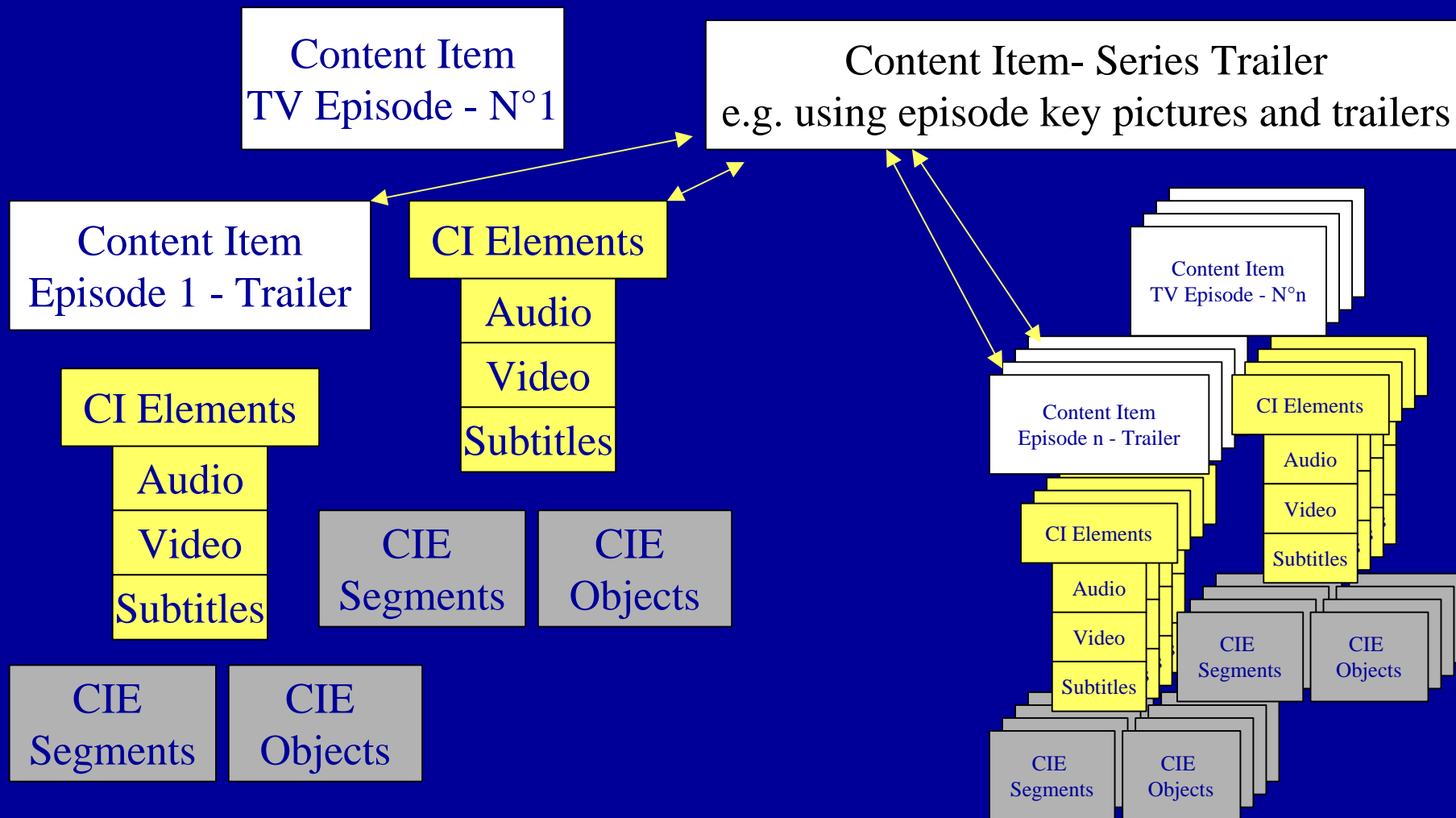
⇒Content Item Element Object (link with MPEG7?)

○Links

⇒Internal references: inheritance tree

⇒External references: identifiers, pointers

Content Package
TV Series - X-Files



Core and Version Metadata

CONTENT (CP, CI, CIE...) → UCN & UPI/ UPD

CORE

Fixed, Content Provider

Parent UCN

Children UCNs

*(items e.g. magazine segments,
components e.g. audio-video-text)*

Human labels

Other non-essential
metadata:

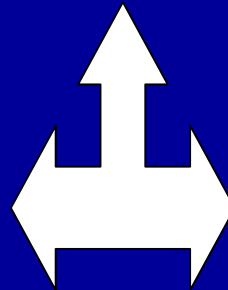
- *attractors*

- *episode number*

- *MPEG7 attributes*

Original Copyright information

Metadata visibility/invisibility -
public/private filter



VERSION

Fixed, Service Provider /right owner

URL(s), related UPI(s)

Format, time, duration

Outlet (e.g. broadcast, WWW, CD-
ROM)

Version copyrights

Version metadata access/usage filters

Metadata visibility/invisibility -
public/private filter

Essential Metadata

- *specific market tailored attractors*

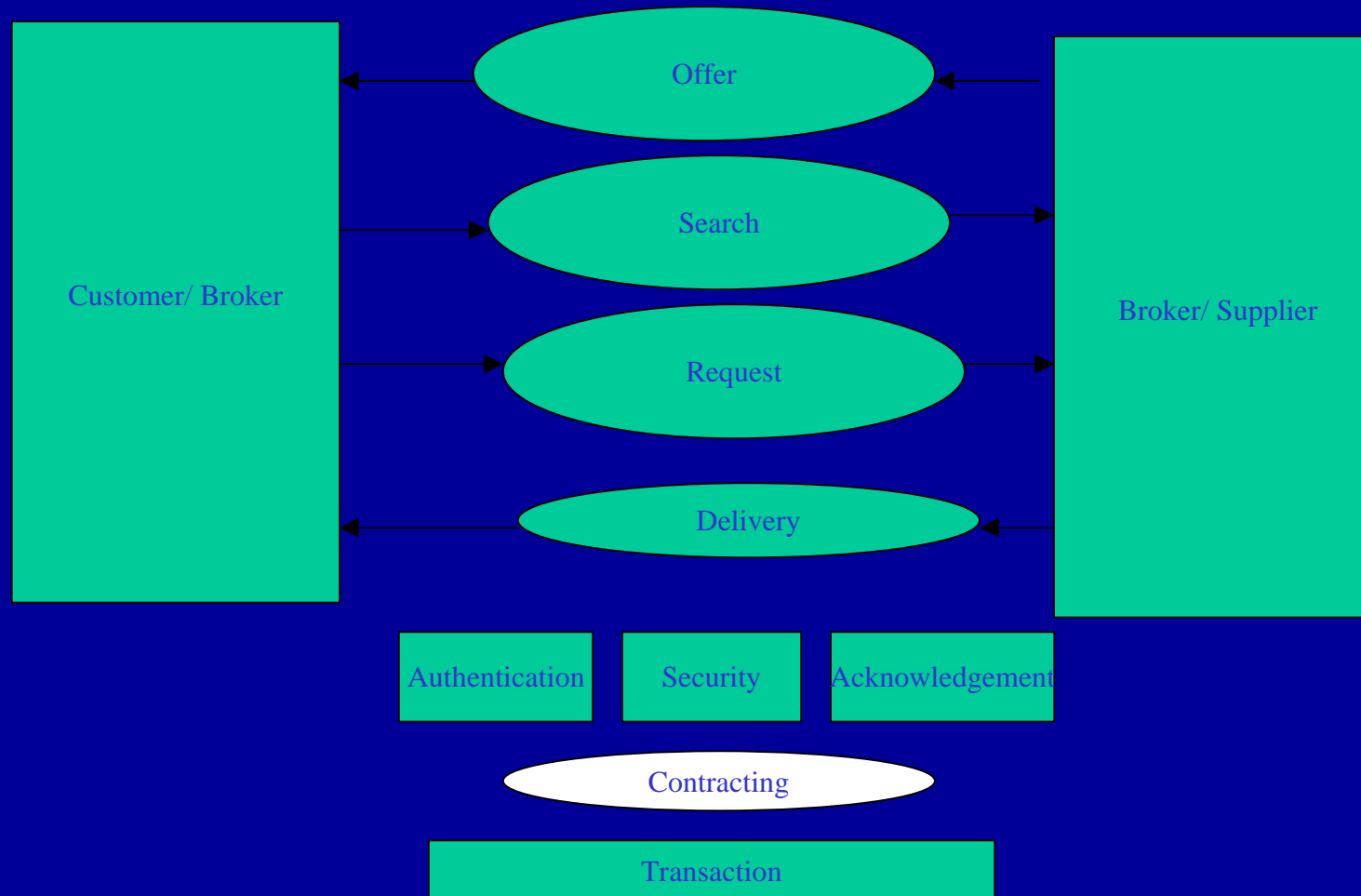
Other non-essential metadata

- *other attractors*

Metadata tailoring, access, copyright and security



Metadata and Transactional Services



Based on ISIS MUSE model

General requirements on Metadata

- Metadata must ease access

 - ⇒ e.g. through direct access via a unique identifier or as a result of a more complex request using attractors

 - ⇒ Requests must be fulfilled independently of the content location in space and time

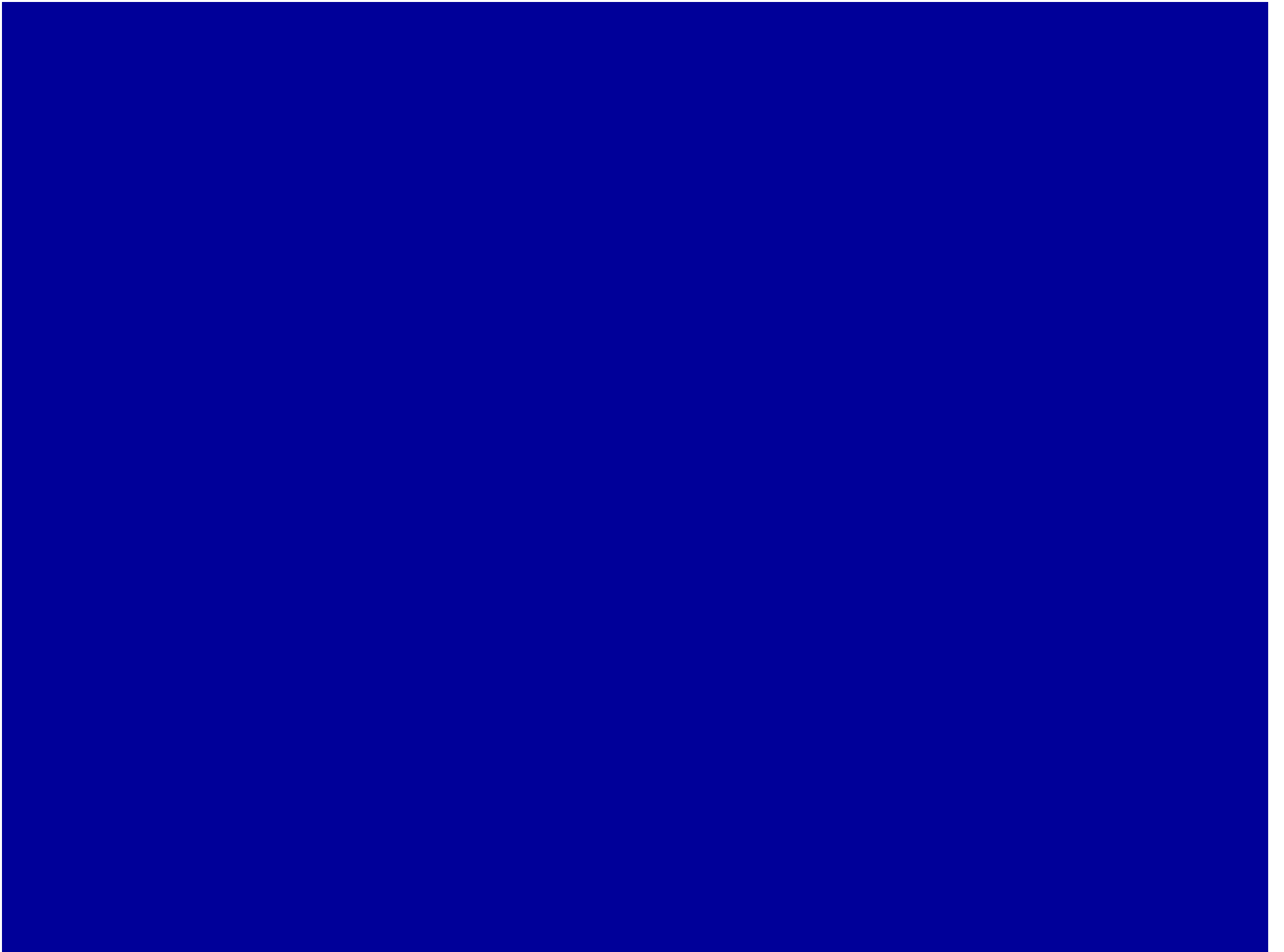
- Metadata can be tailored, edited by different parties (even if relating to the same content) and protected

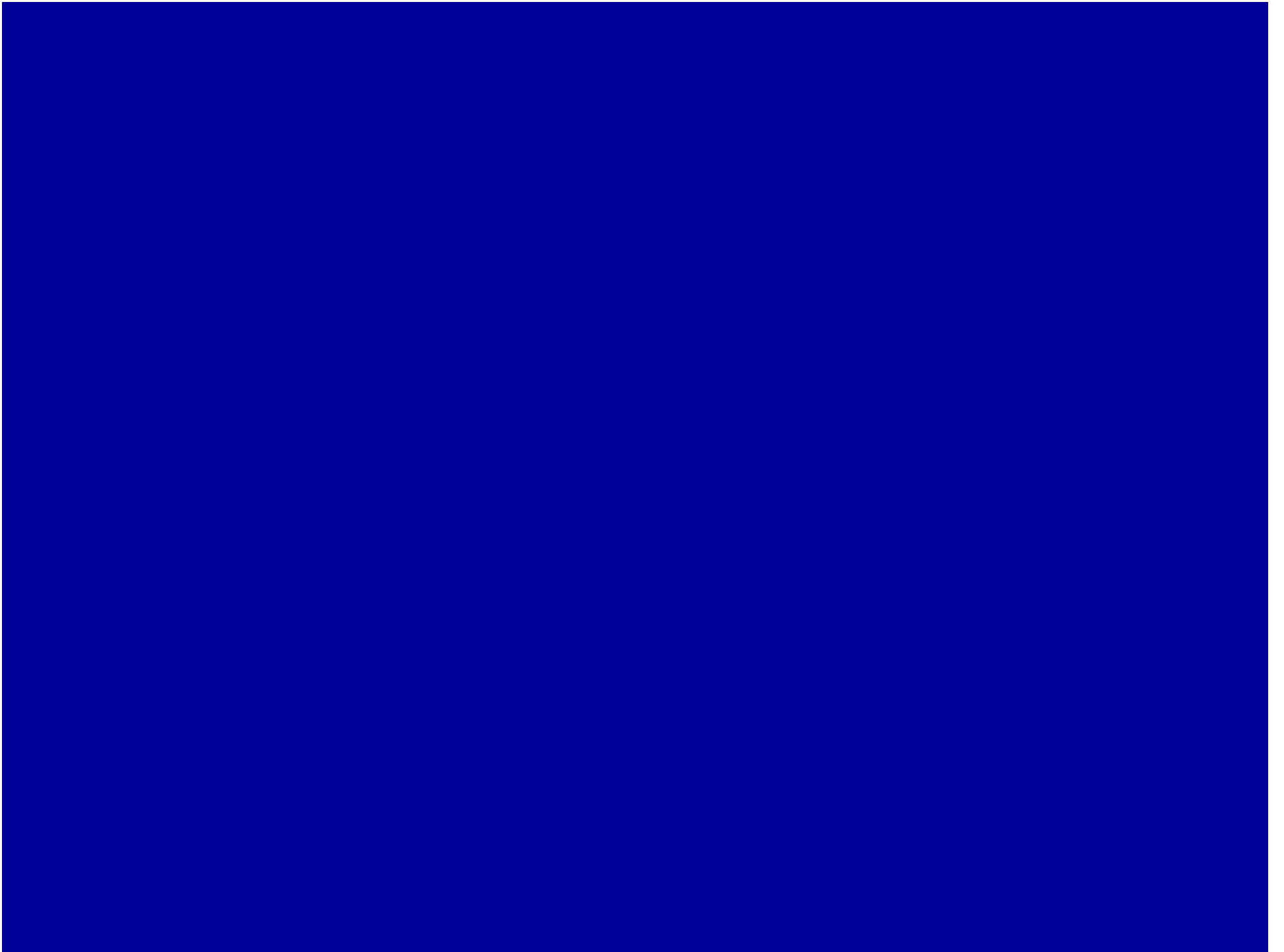
- Metadata should be used for copyright protection

- Transactional information should be encompassed

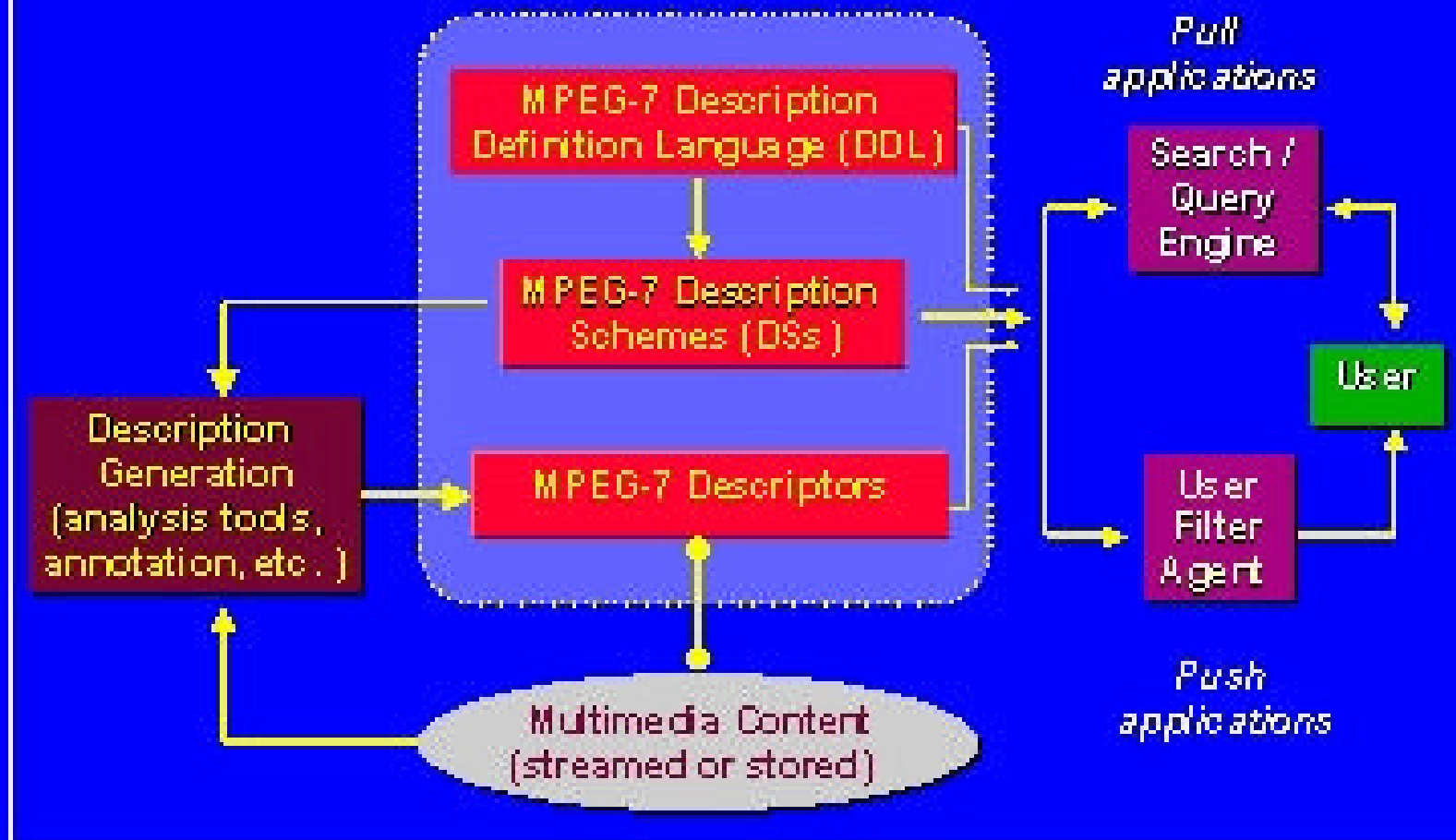
- Compatibility with existing Metadata Systems is necessary to widen content access

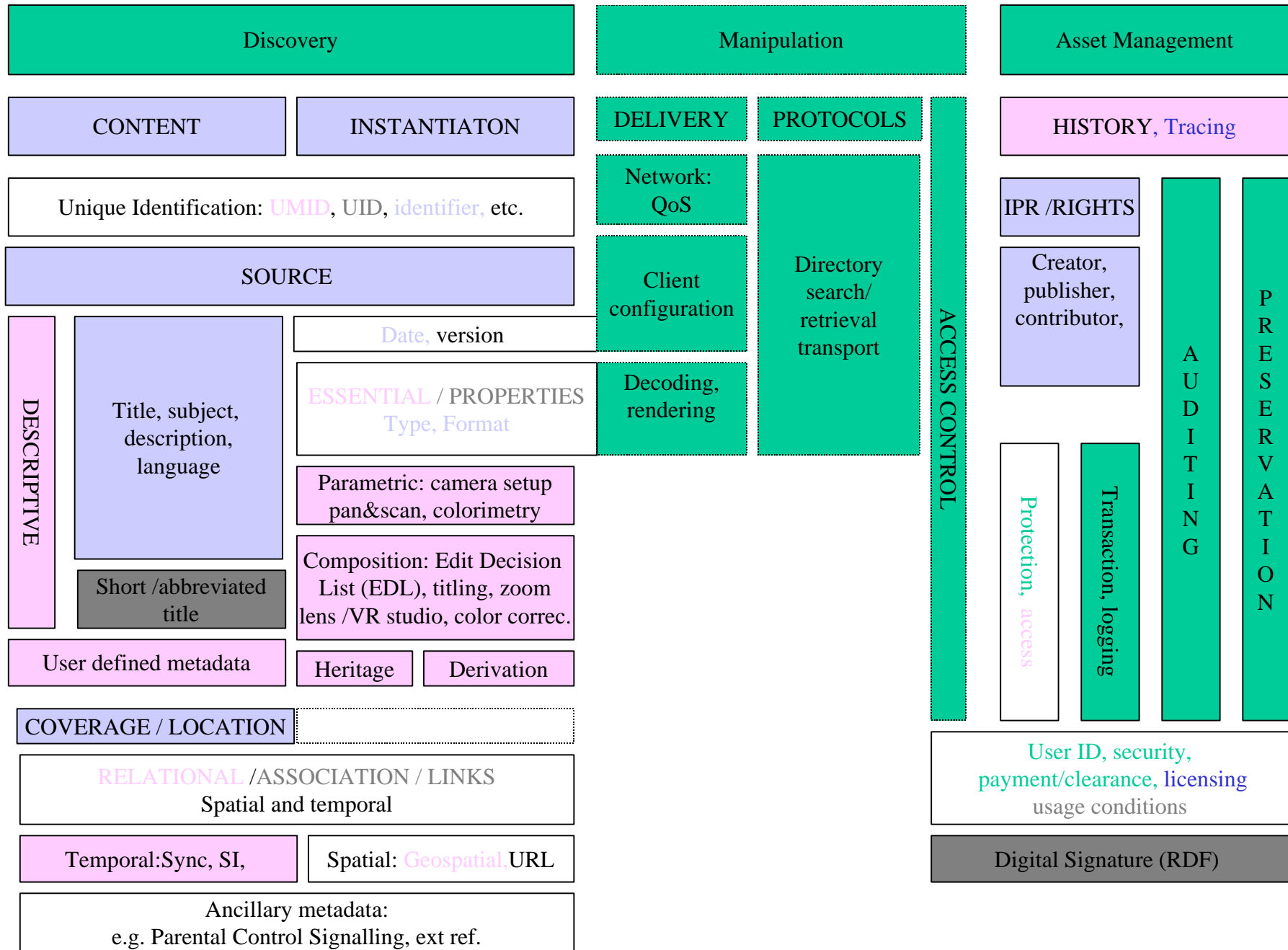
- Authorised end-user metadata editing must be possible





The elements of the MPEG-7 Standard





Attractors
inc. format,
market segment
tailored version

Locators
links

Access / Security
/Digital Signature
Copyright, ownership

Segmentation / objects

Essentials
Keys:
- service ID,
- official registration ID/N°
(e.g. SMPTE, USAN, ATSC),
- parent key,
- time, duration
- original core attractors
(e.g. title, author & producer names)

Locally generated metadata
protection
limited lifetime

