

# SIRSALE: Integrated Video Databases Management Tools

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# INTRODUCTION

## Motivations:

- Video data are intrinsically different from alpha-numerical data (huge volume and time sensitive delivery)
- Video data contents interpretation could be very subjective (tu donne l'exemple du match de foot qui est dans l'article).
- Digital video contents are growing: more and more video contents are produced and made available by professionals and non-professionals (growing rate of 10% by year).

 The need of powerful indexing and retrieval tools

# INTRODUCTION

## Problematics:

- Context heterogeneity

Semantic content access depends of the user context (context heterogeneity tu piques dans l'introduction de l'article)

- End-user terminal heterogeneity

Made video data accessible to all users independently of the nature of their terminals (tu

fais une introduction à ton travail )

# Video Indexing

## Existing Approaches :

- Generic Models :
  - Adaptable for “light” searching and browsing contexts ( tu parle de recherche de contenu de manière simple )
  - Not precise enough to cope with the context heterogeneity.
  - do not provide powerful searching capabilities.
- Dedicated Models :
  - Specifically tailored for the context of particular domains (soccer for example)
  - Provide powerful searching and indexing capabilities for the specified context.
  - Not generic to be used in other contexts

# SIRSALE Goal

Our approach:

Provide end-users with integrated indexing, searching and browsing tools, through the availability of several data models (modules) specifically tailored to support video applications (News, Soccer, Courses, etc.).

Advantage:

- The use of powerful data models that allow efficient exploitation of distributed video data.

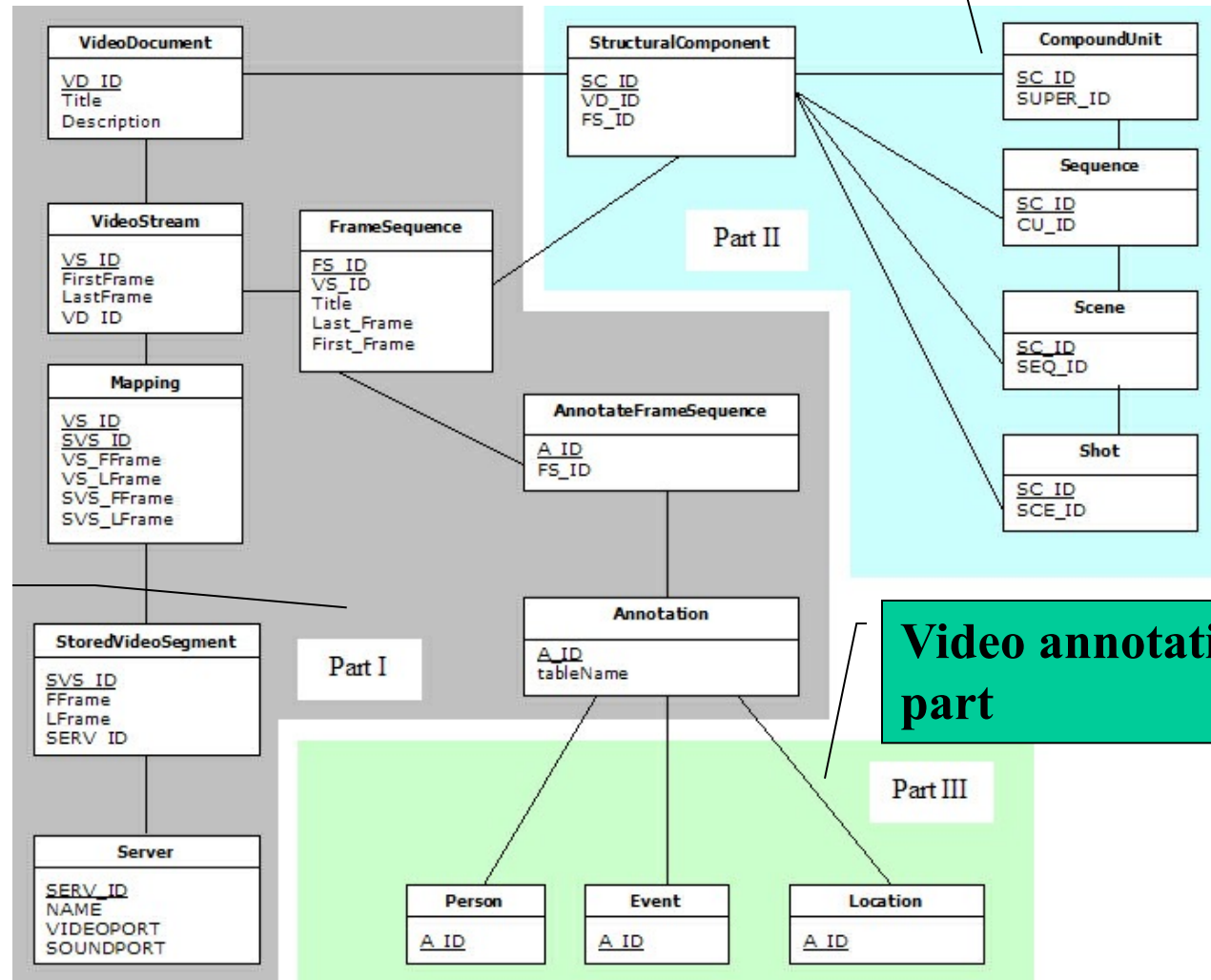
Disadvantage:

- The growing complexity that results from the management of several data models.

# Data model

Il faut dire que c'est uniquement la partie III qui change d'un context à un autre

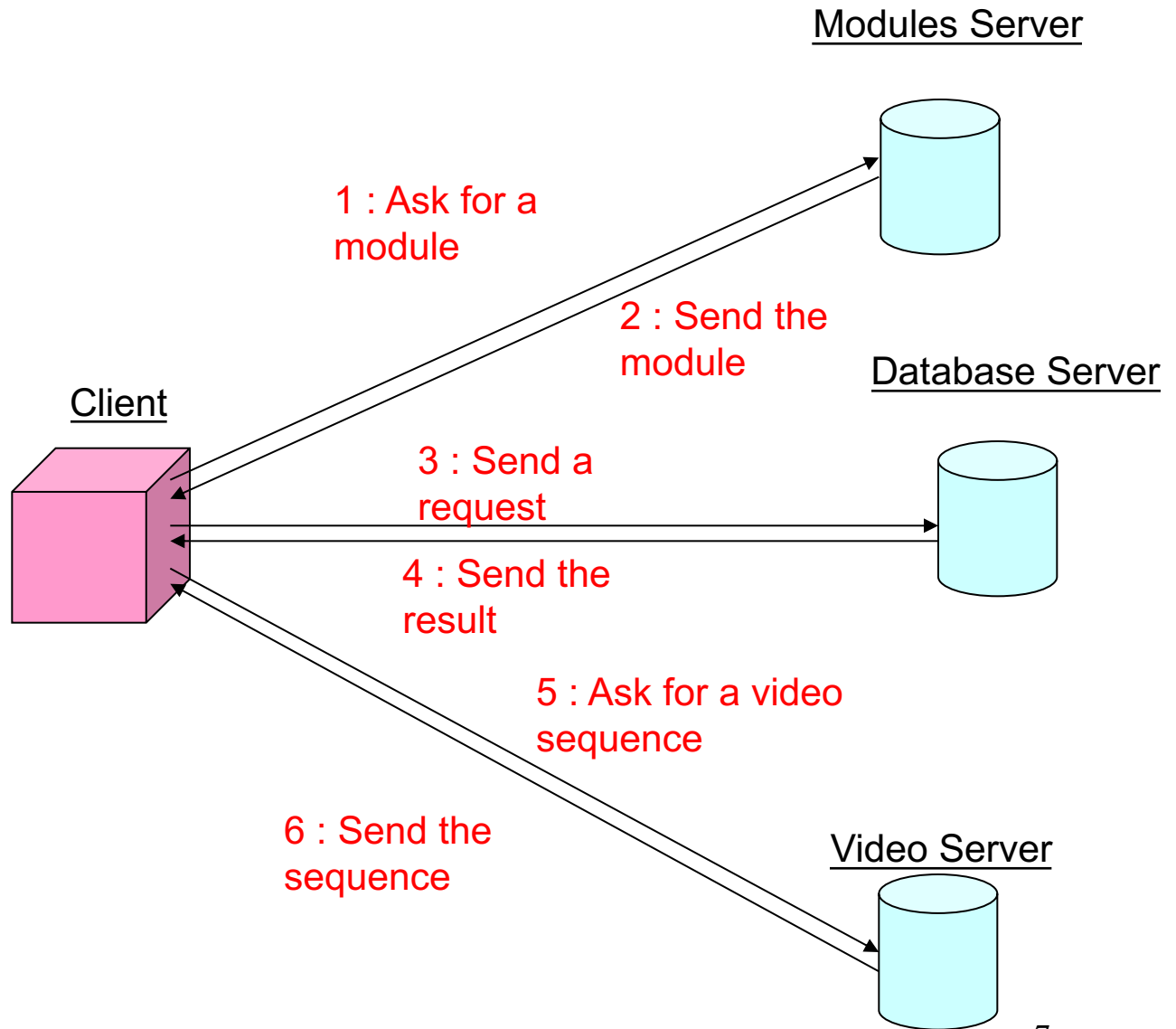
**Video structures management part**



**Video documents management part**

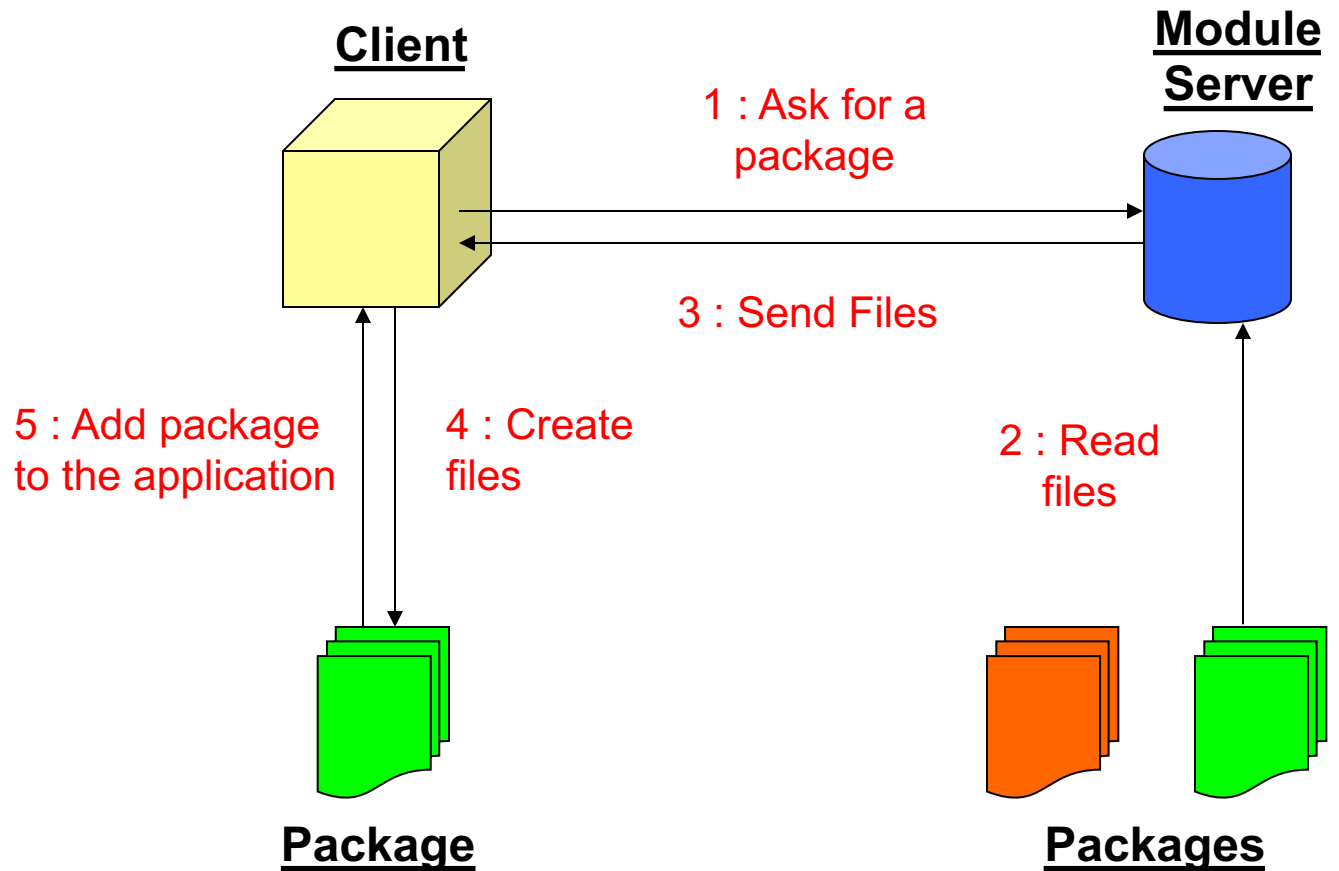
**Video annotating part**

# Architecture



# Architecture

## Modules Server





# SIRSALE Tools

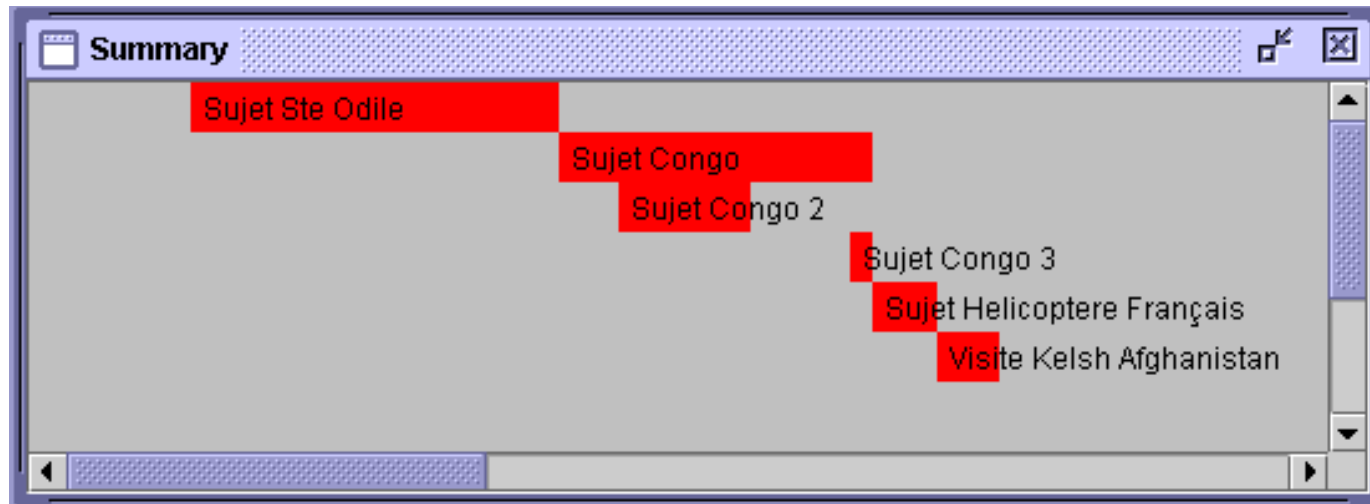
## Annotating Interface

The screenshot displays the 'Admin Annotations' window with the following components:

- Video Streams List:**
  - France 3 20/01/02 - 1
  - Journal de 13H du 10/12/01 - 1
- Frame Sequences List:**
  - Sujet Congo
  - Sujet Congo
  - Sujet Congo
  - Sujet Helicoptere Français
  - Sujet Ste Odile
  - test
  - Visite Kelsh Afghanistan
- Video Player:** Shows a video frame with a '3' in the bottom left corner. Below the video is a progress bar and playback controls (stop, play, next, previous).
- Position:** 0:05:33
- Duration:** 0:25:20
- Title:** Sujet Congo
- First Fra...:** 330
- Last Fra...:** 339
- Persons:**
  - 0 - Familles victimes
  - 1 - GI
  - 2 - Infirmières
  - 3 - Manifestants
- Event:**
  - 0 - Accident Mont Ste Odile - 1992-01-20
  - 1 - Election Georges W Bush - 2001-01-2
  - 2 - Programme Anti Missiles - 2001-01-2
- Location:**
  - 0 - Afrique - Congo
  - 1 - Afrique - Rwanda
  - 2 - Amerique - Argentine
- Buttons:** New, Add, Delete, Update, Summary

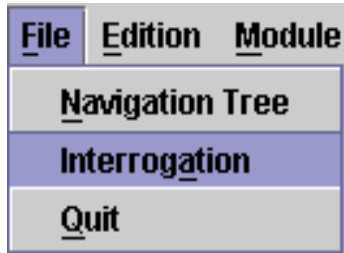
# Architecture

## Annotation Interface



# SIRSALE Tools

## Remote Client Interface



# Examples

## Soccer Interface

The screenshot displays a complex user interface for a soccer-related application, divided into several functional areas:

- Interrogation (Query Builder):** This top-left panel allows users to construct queries. It features three main categories:
  - Player:** Includes entries like "Frau - Pierre-Alain - Français - FC Sochaux-Montbelliard", "Henry - Thierry - Français - Arsenal FC", and "Owen - Michael - English - Liverpool FC".
  - Event:** Includes "Europe - Champion s League", "England - First League", and "France - Première Division".
  - Referee:** Includes "April - John - English", "Durand - Marc - Français", and "Michelli - Fabio - Italian".
  - Stadium:** Includes "Highbury - England - Arsenal", "Stade Bonal - France - Sochaux", and "Stadio dell Alpi - Italia - Turin".Each category has an "Add" button. A central diagram shows a query structure with nodes P 1, E 1, S 1, R11, and R21 connected by lines. Below the diagram are "Operators" (Or, And, Not) and a "Launch" button.
- Video Player:** The top-right panel displays a video titled "d:\oic\news\foot2\_20\_03\_02.mpg". It shows a still image of two Arsenal players in red and white kits celebrating on a field. A progress bar at the bottom indicates a duration of 00:00:00.28.
- Navigation Tree:** The bottom-left panel shows a tree structure with a "News" folder containing a sub-entry "Turin - Arsenal 20/03/2002".
- Result tree:** The bottom-right panel shows the results of a query. It has tabs for "Summary", "Result Tree", and "Server Infos". The "Result Tree" tab is active, displaying a list of results: "Turin - Arsenal 20/03/2002", "Penalty sur Thierry Henry", and "Penalty rate de Thierry Henry".

# Examples

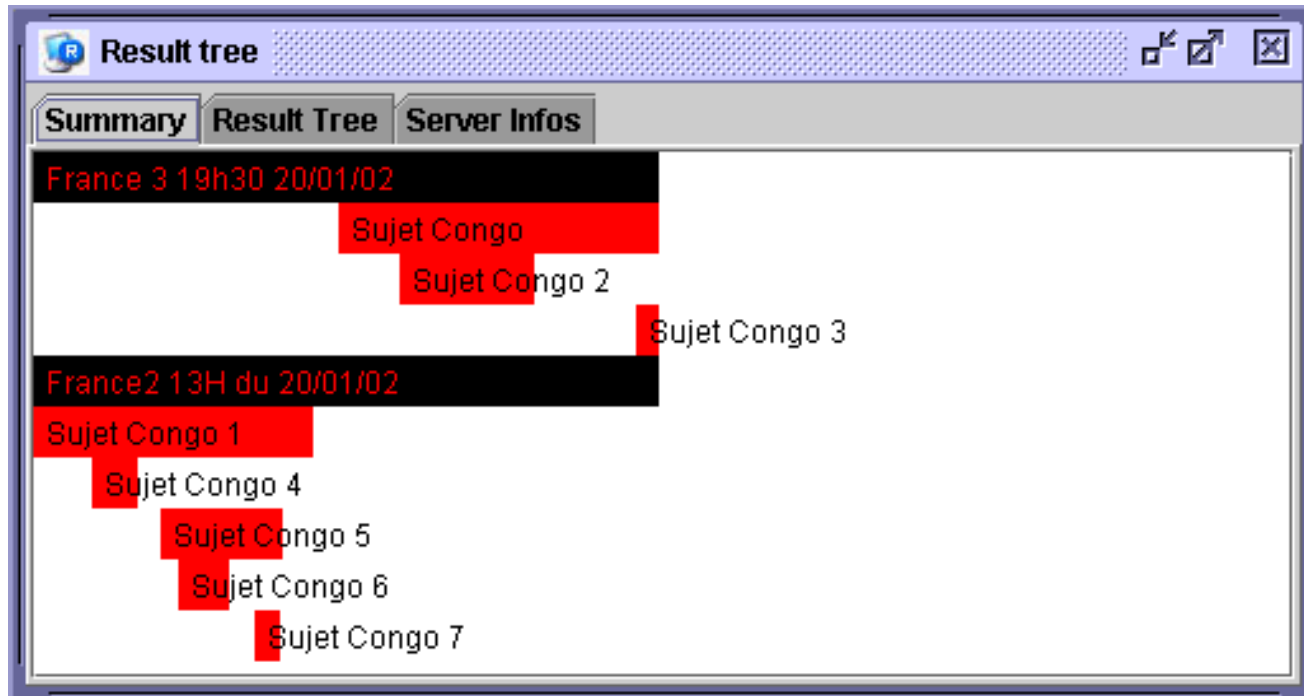
## News Search Interface

The screenshot displays a complex search interface with several components:

- Interrogation Panel:** Contains three lists of search criteria: "Event" (e.g., "2002-01-20 - Accident d'helicoptere"), "Person" (e.g., "Brugère Picou - Jeanne - Spécialiste ESB"), and "Location" (e.g., "Afrique - Congo"). Each list has an "Add" button.
- Diagram:** A query graph showing nodes E 1, E 2, P 1, P 2, L 1, L 2, R 11, R 12, R 13, R 21, R 22, and R 31 connected by lines.
- Operators:** Radio buttons for "Or", "And" (selected), and "Not". A "Launch" button is also present.
- Description:** A field labeled "Request 13".
- Video Player:** A window titled "j:/news/france3\_20\_01\_02.mpg" showing a news anchor.
- Navigation Tree:** A tree view showing "News" > "France 3 20/01/02" > "Journal de 13H du 10/12/01".
- Result Tree:** A tree view showing "Results" > "1 - Sujet Congo - 53 sec", "2 - Sujet Congo - 9 sec", "3 - Sujet Congo - 18 sec", and "4 - Sujet Congo - 48 sec".

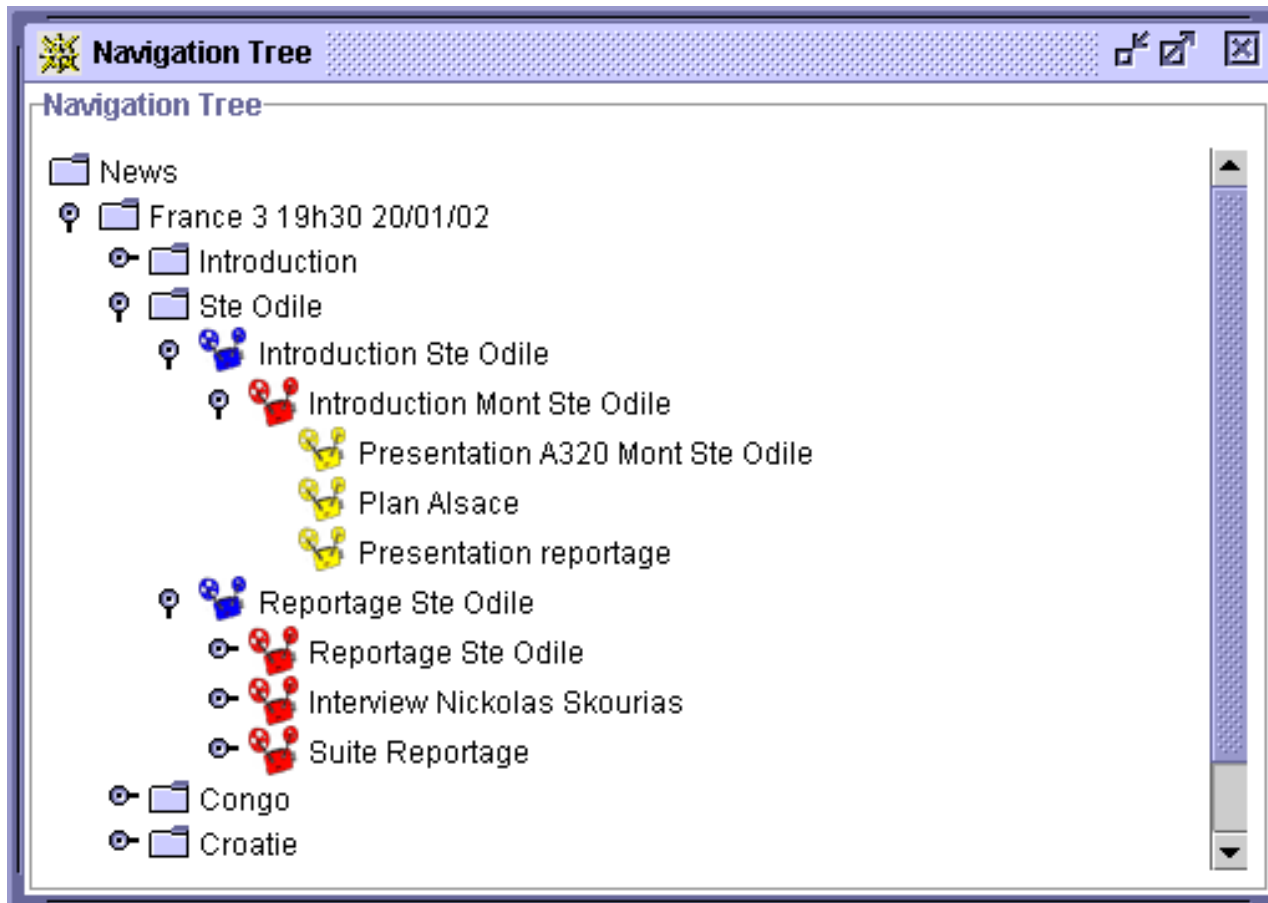
# Examples

## Searching results window



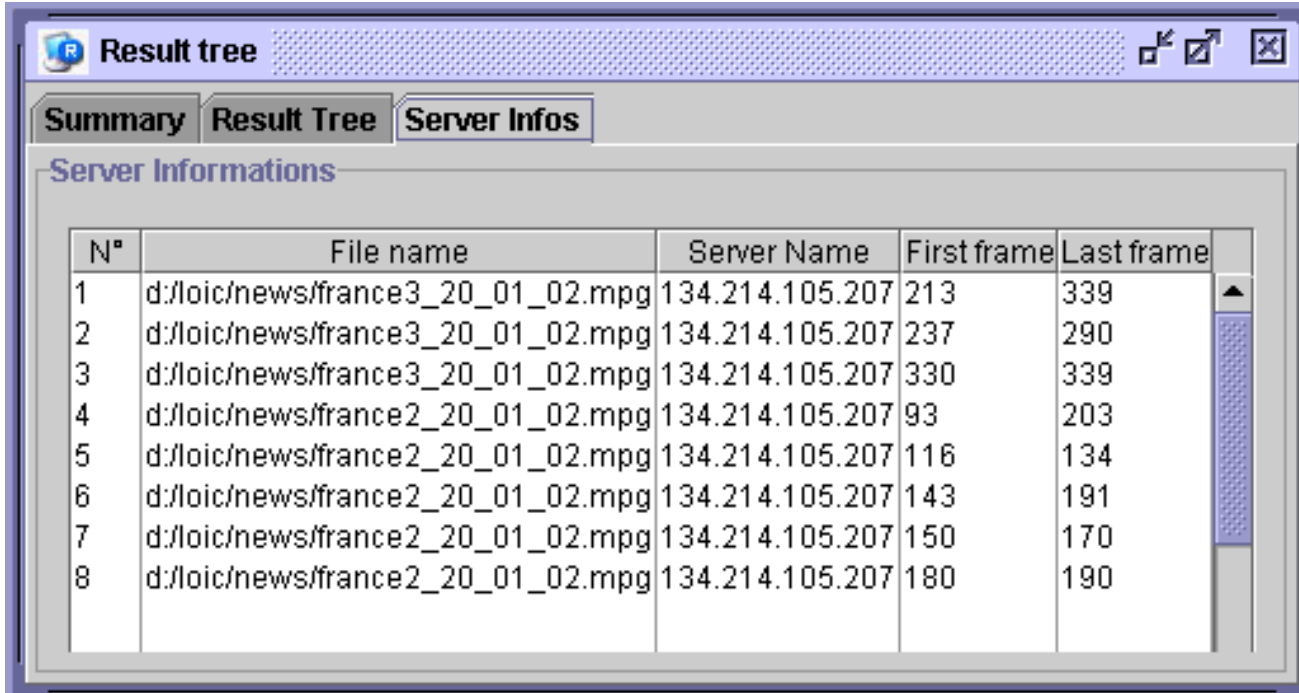
# SIRSALE Tools

## Browsing Interface



# SIRSALE Tools

## Video Data Distribution Management



The screenshot shows a software window titled "Result tree" with three tabs: "Summary", "Result Tree", and "Server Infos". The "Server Infos" tab is active, displaying "Server Informations" as a table with 8 rows and 5 columns. The columns are labeled "N°", "File name", "Server Name", "First frame", and "Last frame". The data in the table is as follows:

N°	File name	Server Name	First frame	Last frame
1	d:/loic/news/france3_20_01_02.mpg	134.214.105.207	213	339
2	d:/loic/news/france3_20_01_02.mpg	134.214.105.207	237	290
3	d:/loic/news/france3_20_01_02.mpg	134.214.105.207	330	339
4	d:/loic/news/france2_20_01_02.mpg	134.214.105.207	93	203
5	d:/loic/news/france2_20_01_02.mpg	134.214.105.207	116	134
6	d:/loic/news/france2_20_01_02.mpg	134.214.105.207	143	191
7	d:/loic/news/france2_20_01_02.mpg	134.214.105.207	150	170
8	d:/loic/news/france2_20_01_02.mpg	134.214.105.207	180	190



# Conclusion and perspectives

- The implemented system shows the effectiveness of our approach.

- Professionnel have gave a positive feedback and suggest further improvements, especially for indexing and annotating. ( tu dis qu 'on l 'a montré à des une chaine de télévision france3 qui ont été satisfait )

- Integrate a full parallel multimedia server able to support the expected workload ( tu dis qu 'on a une certaine expérience dans les serveurs parallèles )

- Add a presentation tools that allows the construction of complex video presentations from the queried sequences