MASHUPS: BUILDING MULTIMEDIA DOCUMENTS ON THE WEB

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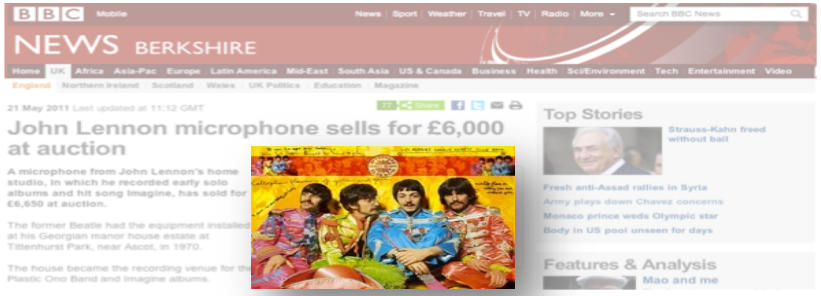
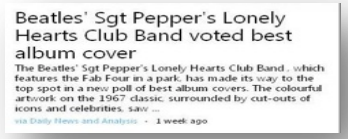
AGENDA

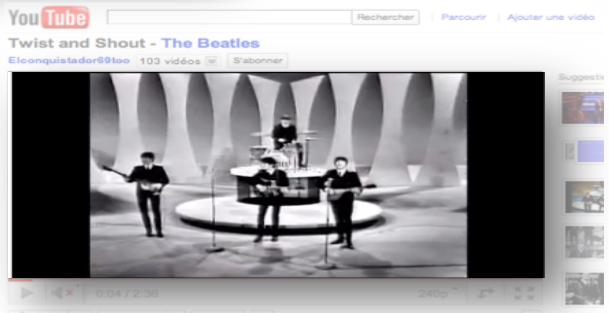
- Mashing up Web data
  - Key concepts
  - Problem statement and objective
- SUNO: a mashup definition environment
  - Principle: mashing up data in space
  - General architecture and main functions
  - Implementation issues
- Conclusions and perspectives

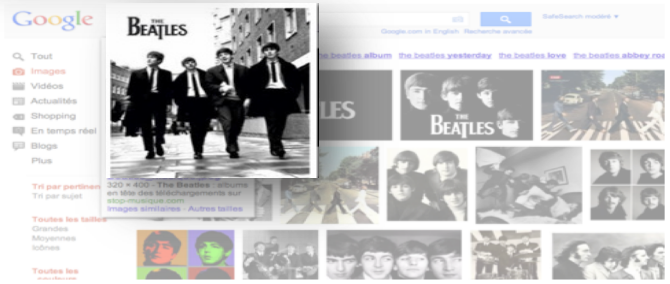
SCENARIO

- Data integration in the Web
  - Aggregation
  - Combination
  - Visualization









MASHUP

- Mashlet
  - **Atomic** and **reusable** container that calls a **data-provider** and
  - **Presents** the retrieved data (e.g. a Web page)
  - Data Provider
    - Web scrapping
    - Feeds
    - Web services
- Mashup

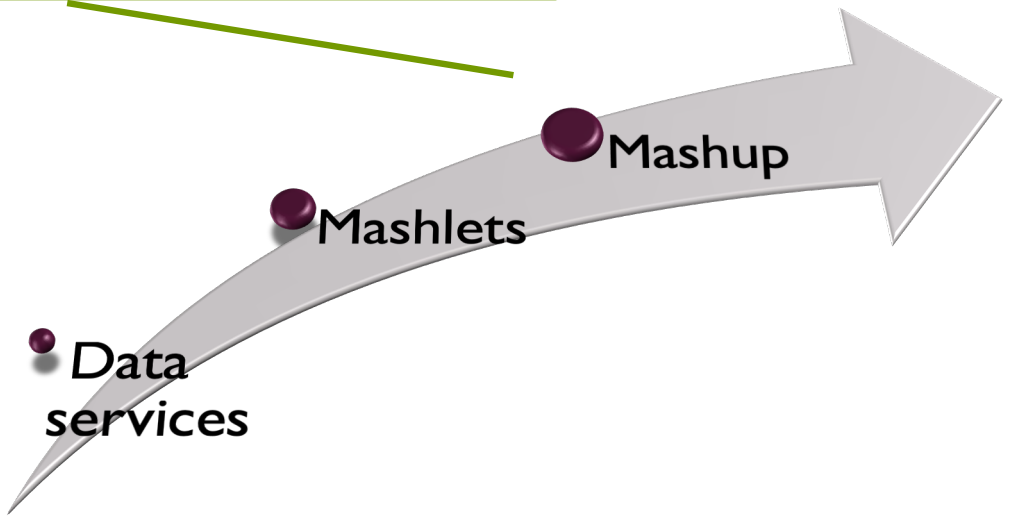
MASHUP

- Mashlet
- Mashup
  - Application that **aggregate**, **integrate**, **manage** and **display** data, which are retrieved from several data-providers
  - Examples
    - Yahoo! Pipes (Data Flow)
    - MS Montage (Spatial data organization)

MASHING UP DATA

- Mashlet
  - Graphical: widget
  - Functional: web services
- Mashup
  - Composition of mashlets
  - Loosely coupled data integration

- Databases
- Web services
- Web Pages
- Local Files

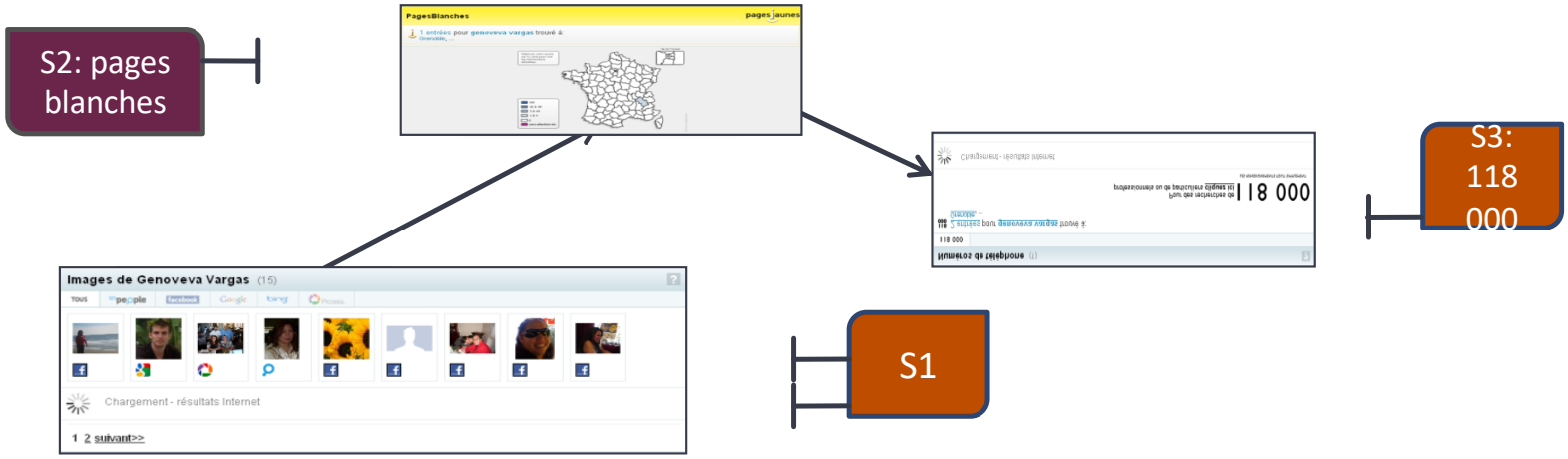


EXISTING WORKS

CRITERION	WSO2 MASHUP SERVER	YAHOO! PIPES	INTEL MASHMAKER	PRESTO
Type	Platform	Platform	Platform	Language/Platform
Implementation	JavaScript	Drag-And-Drop	Drag-And-Drop	D&D XML/ support for adding scripts
Edition tool	Navigator	Navigator	Navigator	Eclipse/ Navigator
Dashbord	WSO2 gadget server	Yes	Yes	Yes
Catalogue	No	Yes	Yes	No

APPROACH

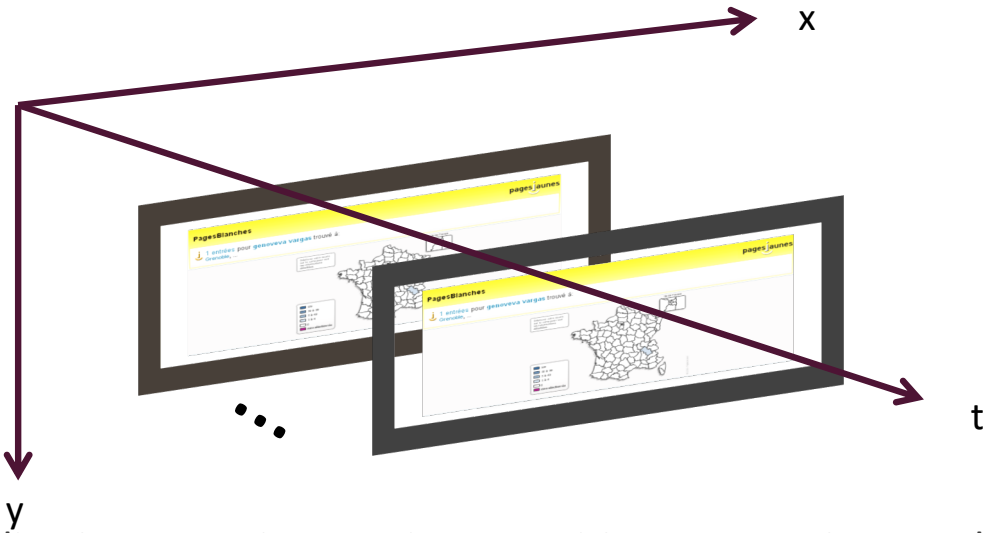
Digital profile of Genoveva Vargas : address, google, bing, flicker, facebook …



- **Mashlet**: basic unit for retrieving data from a data service (service call) and visualizing results
  - Data service identified by an URI and exports an API with methods for retrieving data
  - Visualization defines a way how to display data in a 2D space (html page) and in time
- **Mashup**: a set of mashlets associated by spatial and temporal relationships

MASHLET

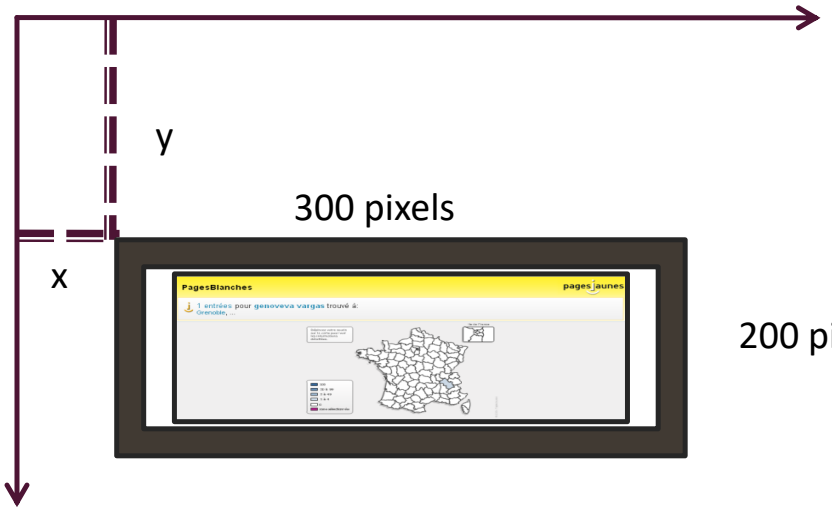
Digital profile of Genoveva Vargas : address, google, bing, flicker, facebook …



- Visualization: associates a size, a position, a start time, and a duration to the data retrieved from a service
- Management: frequency in which data have to be retrieved by calling the service

MASHLET

Digital profile of Genoveva Vargas : address, google, bing, flicker, facebook …

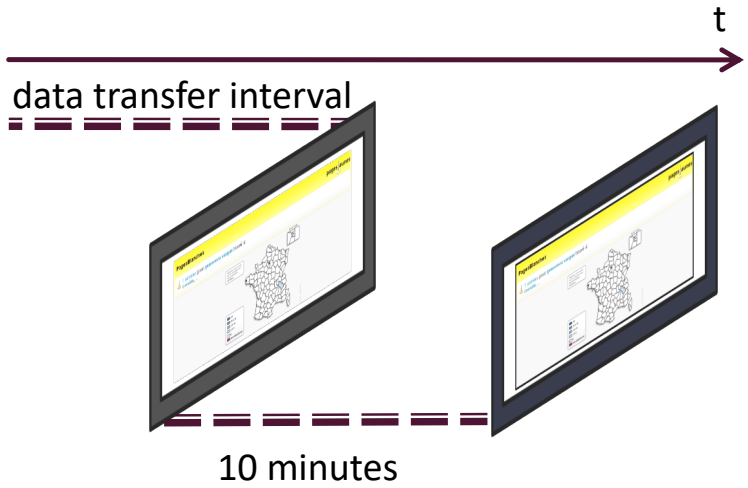


Present Genoveva's current addresses during 10 minutes once data have been retrieved in ***the upper part of the space in a rectangle of 300 x 200 pixels***

- Visualization: associates **a size, a position**, a start time, and a duration to the data retrieved from a service
- Management: frequency in which data have to be retrieved by calling the service

MASHLET

Digital profile of Genoveva Vargas : address, google, bing, flicker, facebook …



*Present Genoveva's current addresses **during 10 minutes once data have been retrieved** in the upper part of the space In a rectangle of 300 x 200 pixels*

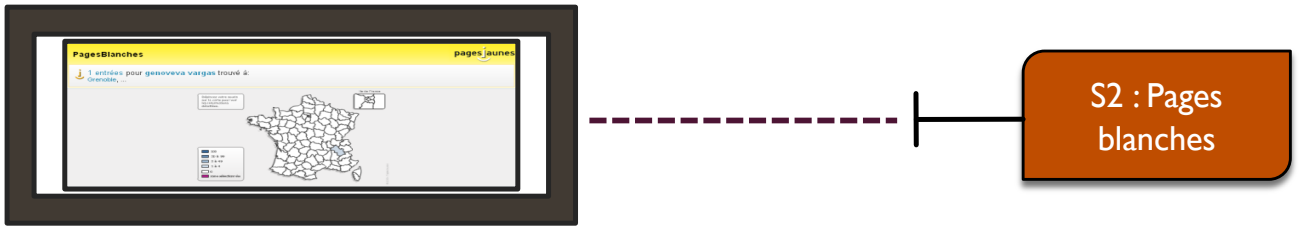
- Visualization: associates a size, a position, **a start time, and a duration** to the data retrieved from a service
- Management: frequency in which data have to be retrieved by calling the service

MASHLET

Digital profile of Genoveva Vargas : address, google, bing, flicker, facebook …

But Genoveva moves a lot and changes addresses frequently …

… so data have to be refreshed

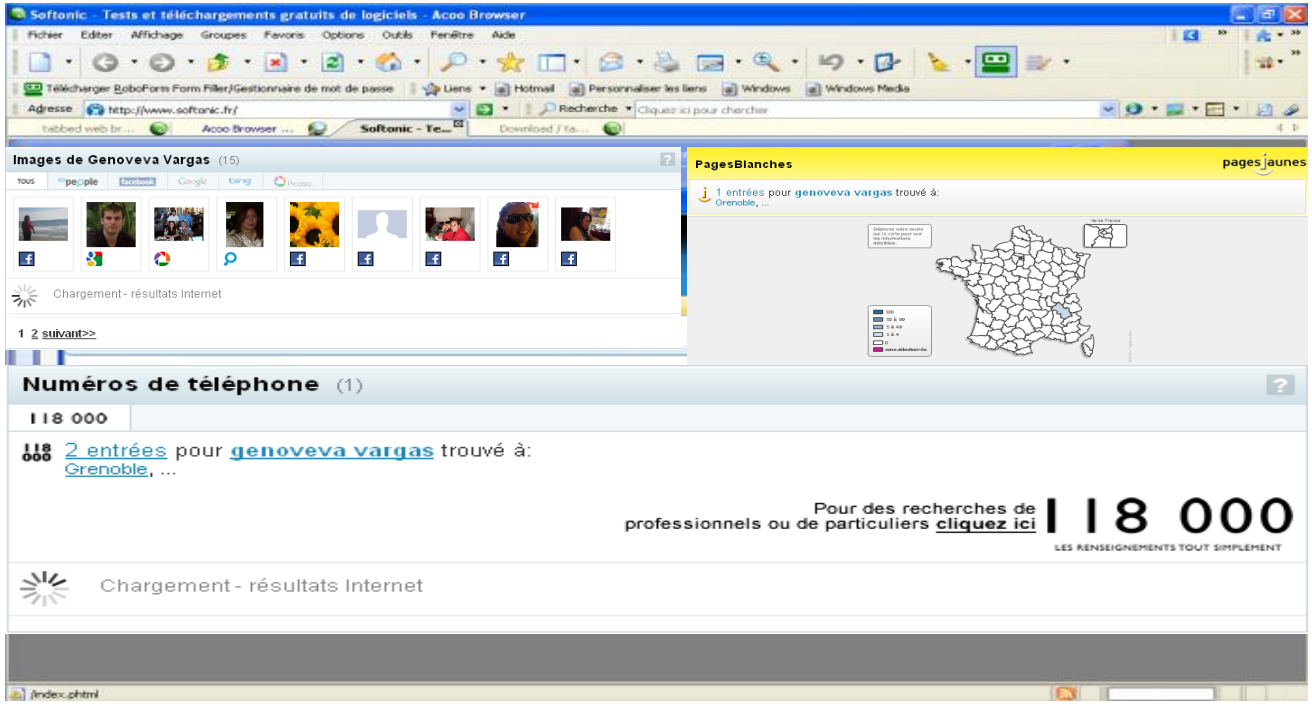


Get Genoveva's address every week

- Visualization: associates a size, a position, a start time, and a duration to the data retrieved from a service
- Management: **frequency in which data have to be retrieved by calling the service**

MASHUP

Digital profile of Genoveva Vargas : address, google, bing, flicker, facebook …

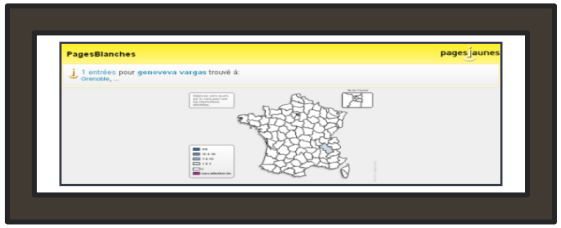


Inspired in http://www.123people.fr

MASHUP ELEMENTS

M_1

S2: pages blanches



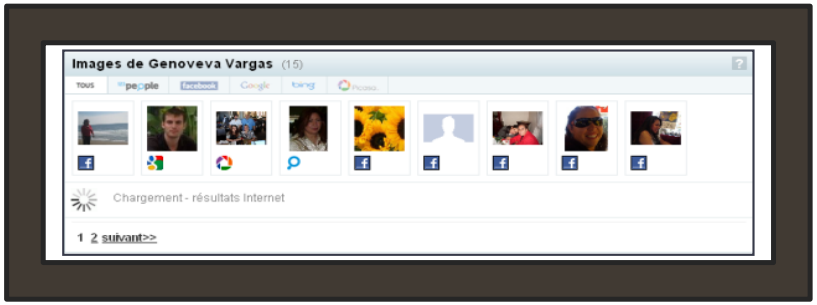
Present Genoveva's current addresses during 10 minutes once data have been retrieved in the upper part of the space In a rectangle of 300 x 200 pixels

M_3

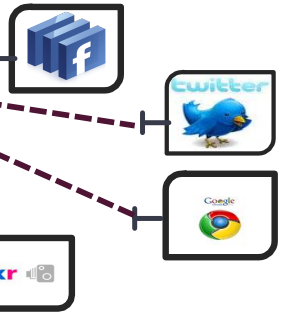
S3: 118 000

Present Genoveva's telephone numbers during 10 minutes once data have been retrieved in the upper part of the space in a rectangle of 600 x 200 pixels

M_2

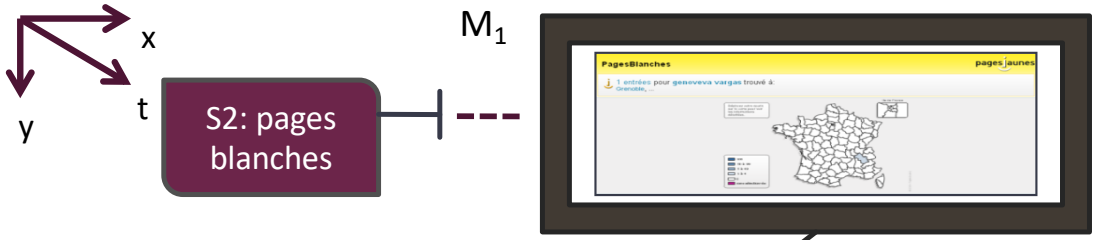


S1

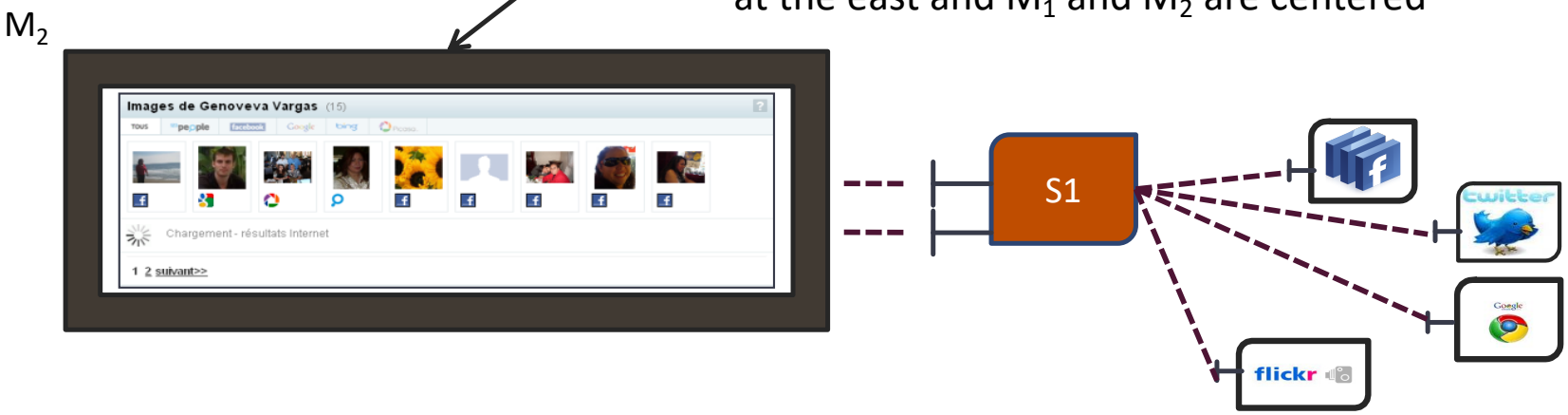


Present Genoveva's photos as long as data have been retrieved in the upper part of the space in a rectangle of 600 x 150 pixels

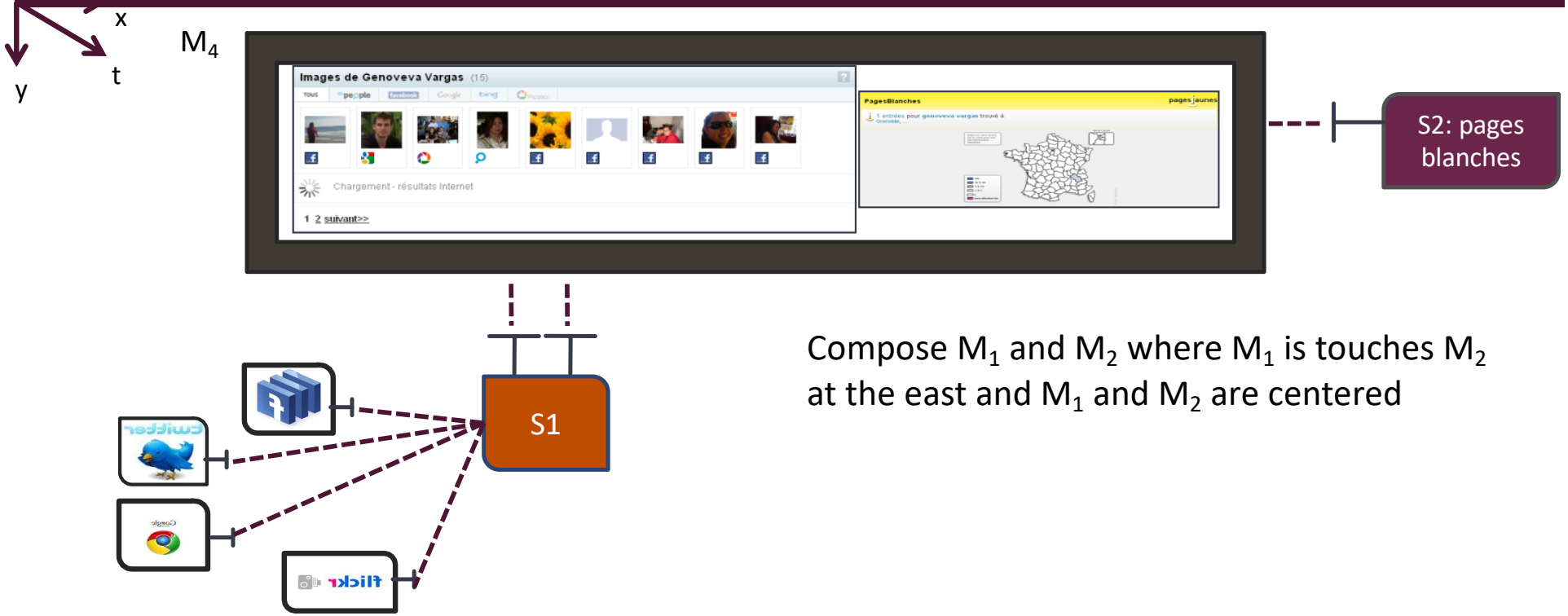
MASHUP



Compose M_1 and M_2 where M_1 is touches M_2 at the east and M_1 and M_2 are centered

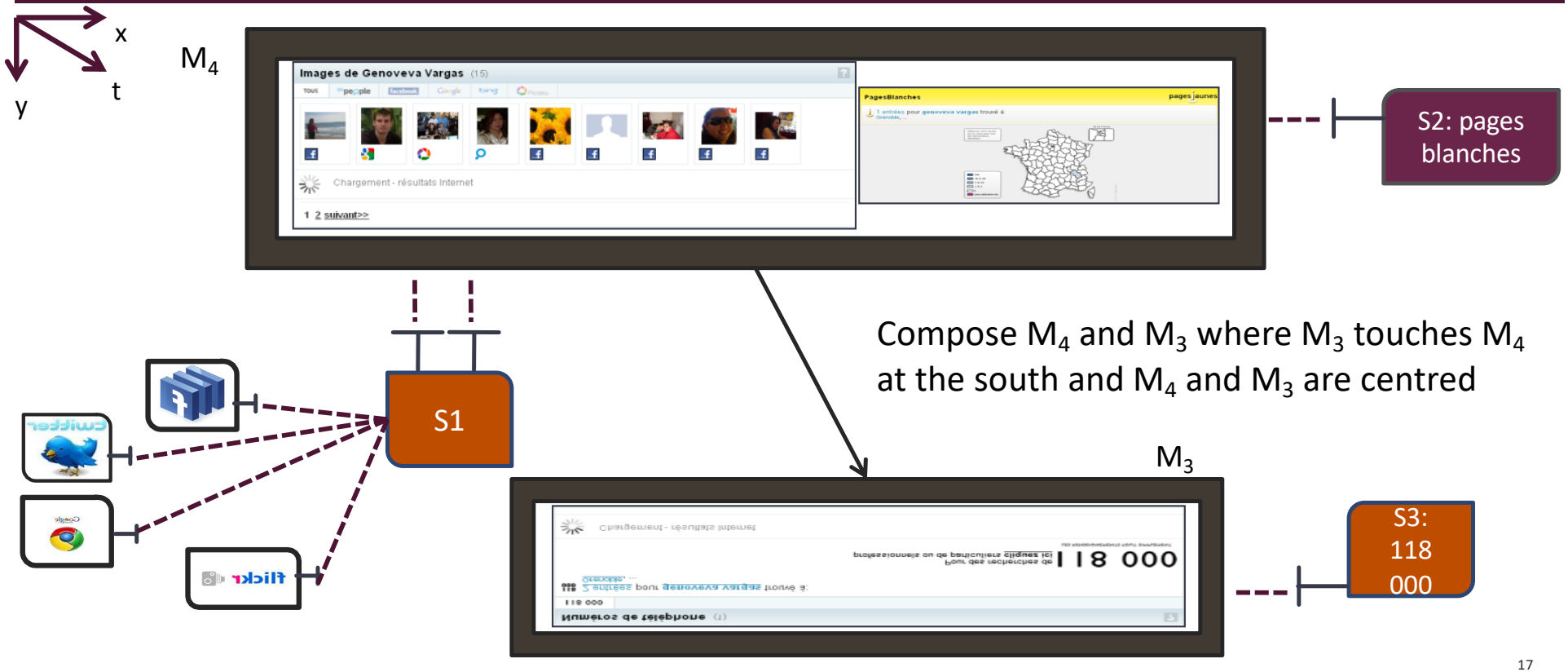


MASHUP

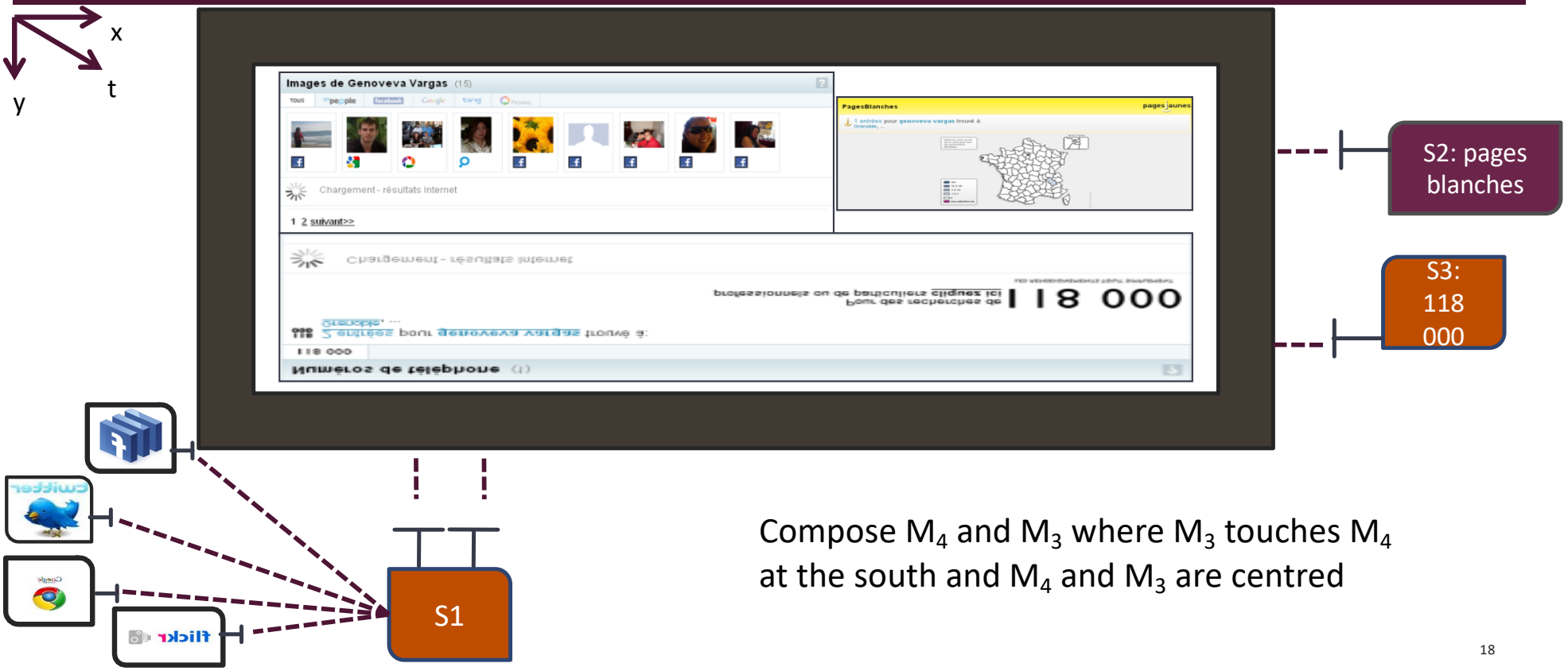


Compose M_1 and M_2 where M_1 is touches M_2 at the east and M_1 and M_2 are centered

MASHUP


x
y
t
M_4
Images de Genoveva Vargas (15)
Chargement - résultats Internet
1 2 suivant>>
PagesBlanches
pages jaunes
S2: pages blanches
S1
Compose M_4 and M_3 where M_3 touches M_4 at the south and M_4 and M_3 are centred
M_3
S3: 118 000

MASHUP



Compose M_4 and M_3 where M_3 touches M_4 at the south and M_4 and M_3 are centred

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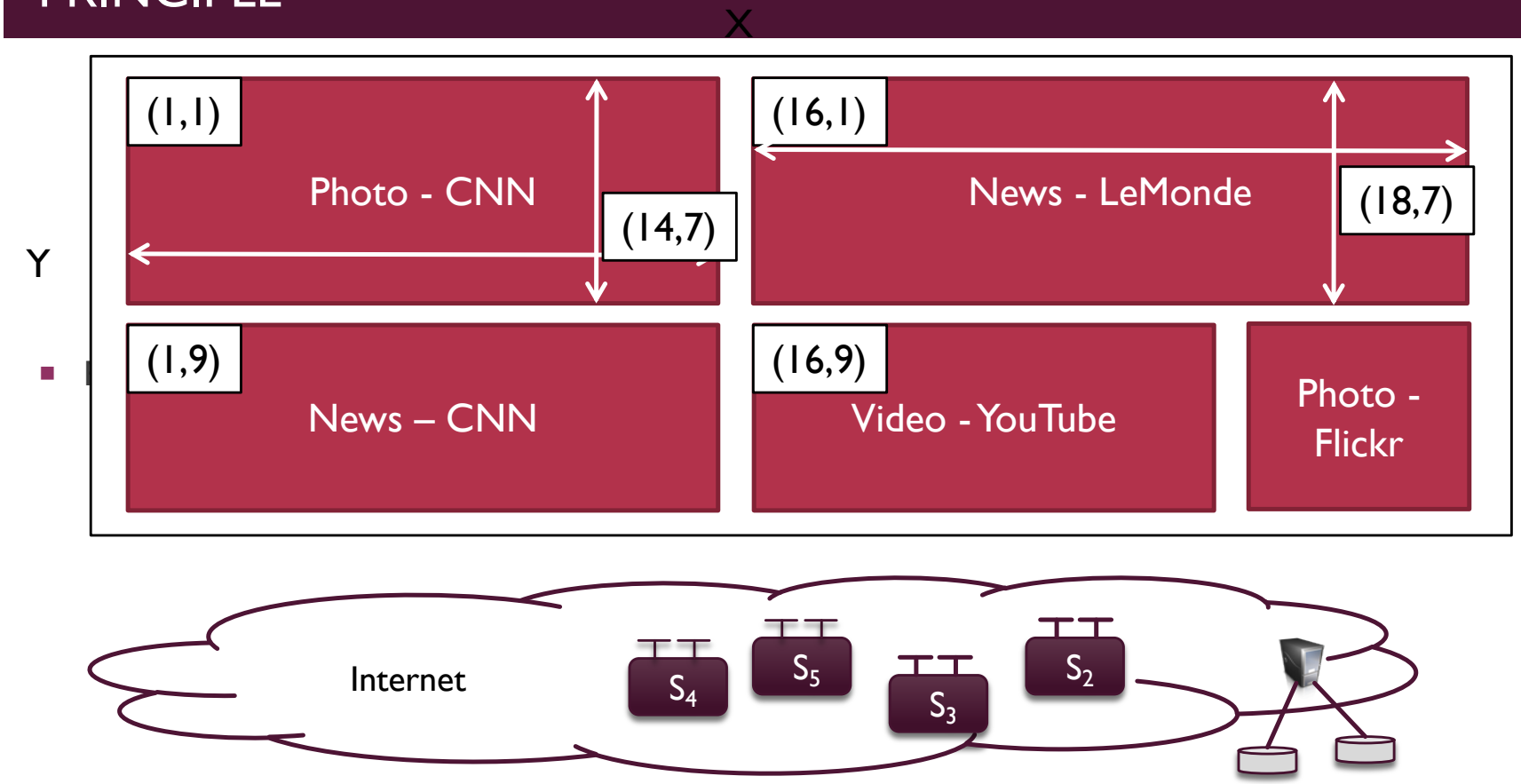
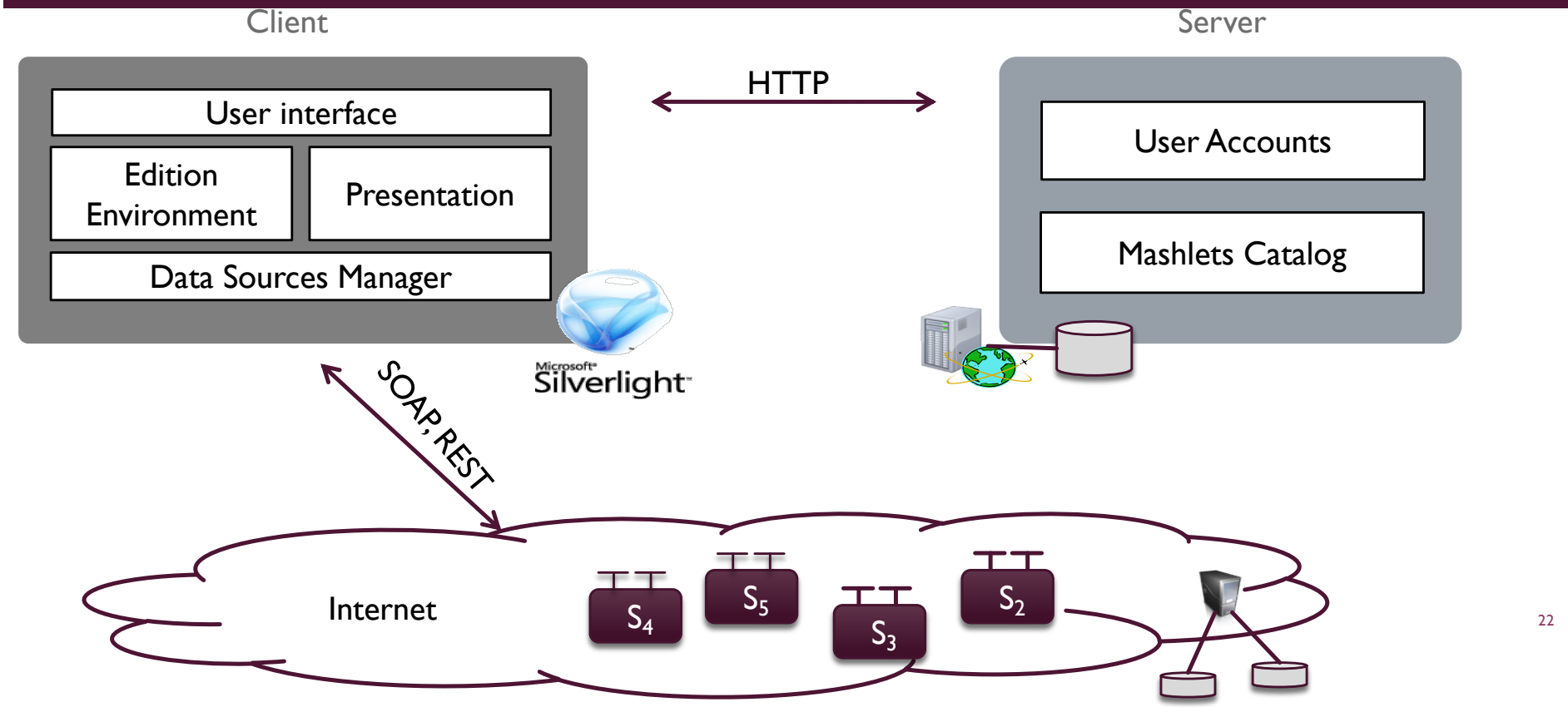
MASHING UP DATA IN A 2D SPACE PRINCIPLE



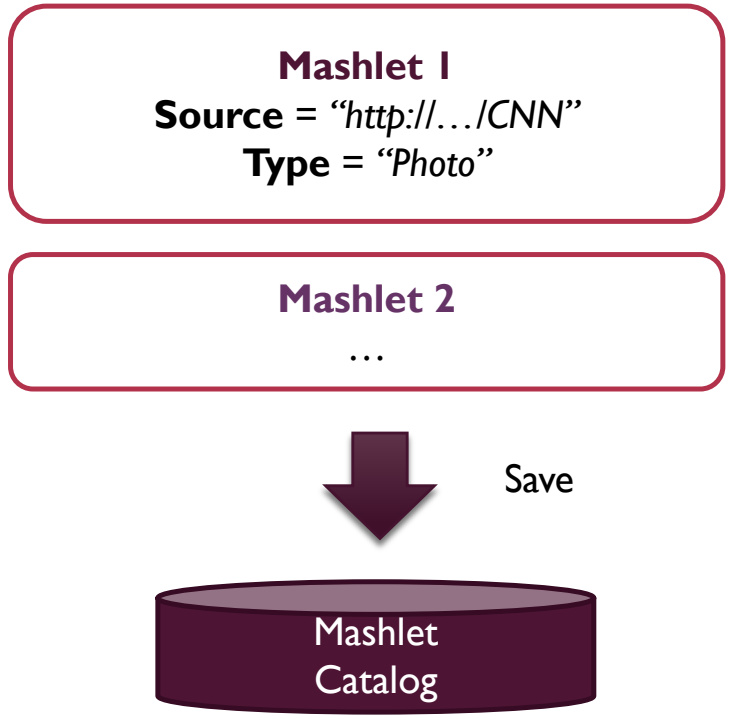
SUNO ARCHITECTURE



SUNO FUNCTIONS

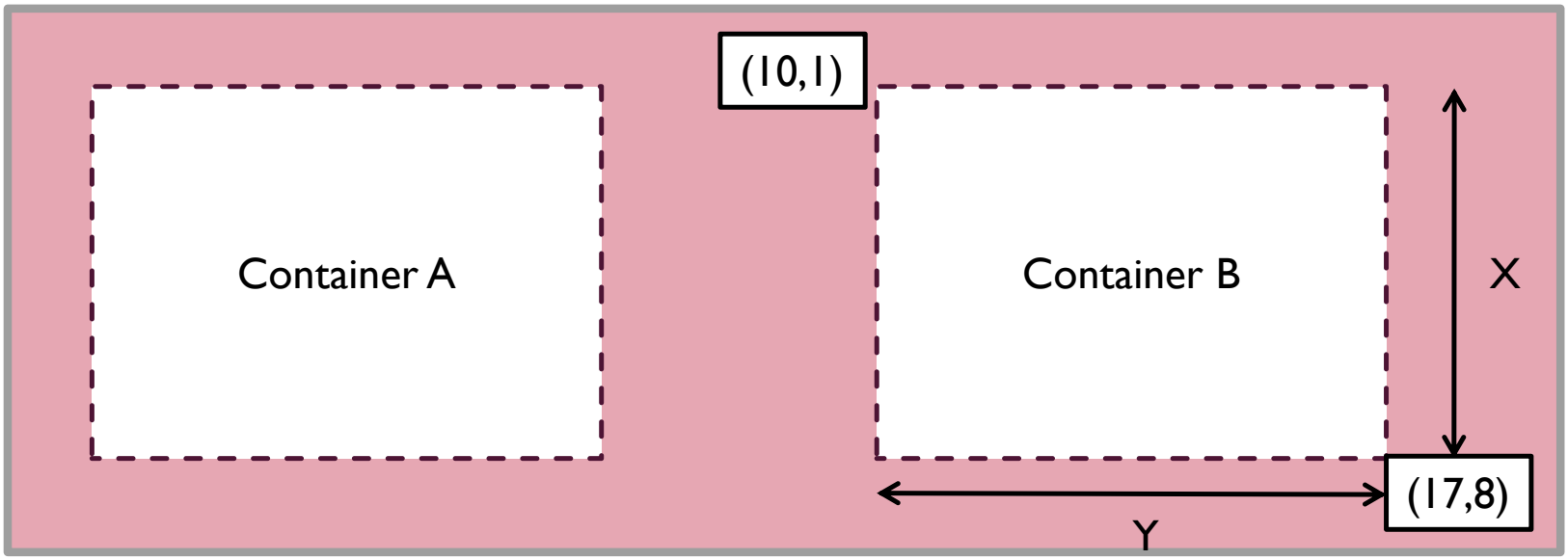
MASHLET DEFINITION

- Procedure
  - **Step 1** Specify the sources
  - **Step 2** Specify the data format
  - **Step 3** Save the mashlet



SUNO FUNCTIONS

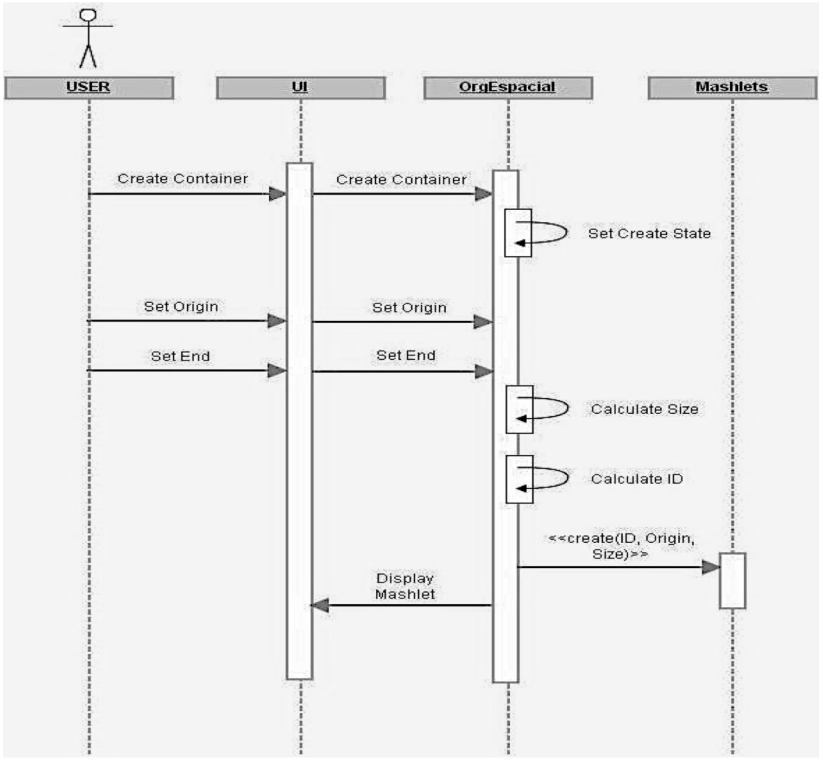
MASHUP 2D SPACE ORGANIZATION (I)

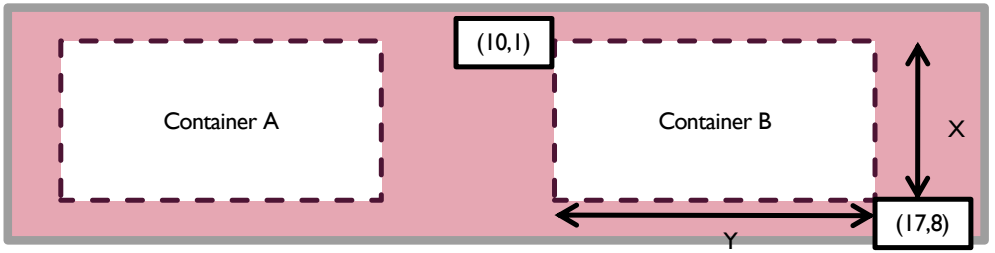


"My First Mashup"

SUNO FUNCTIONS

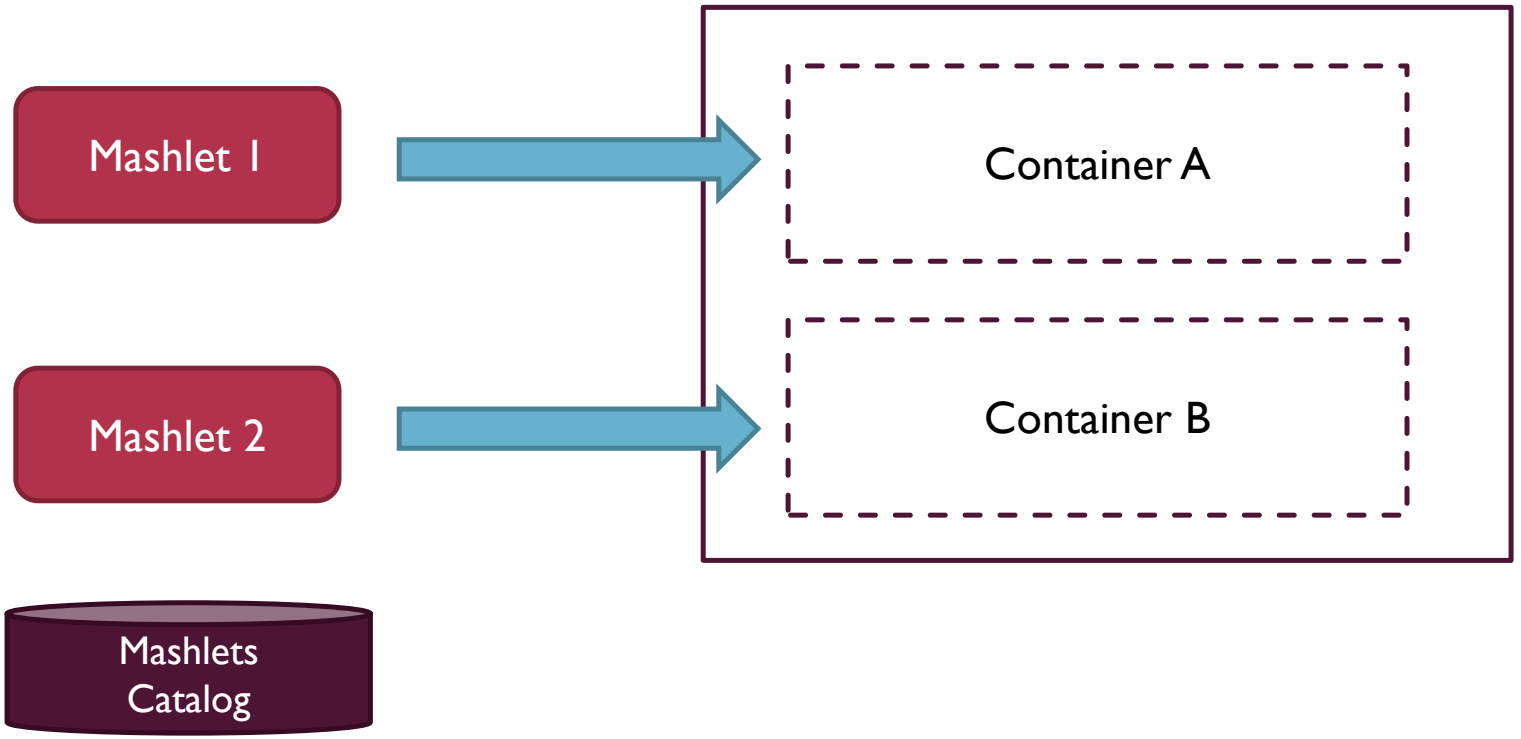
MASHUP 2D SPACE ORGANIZATION (II)





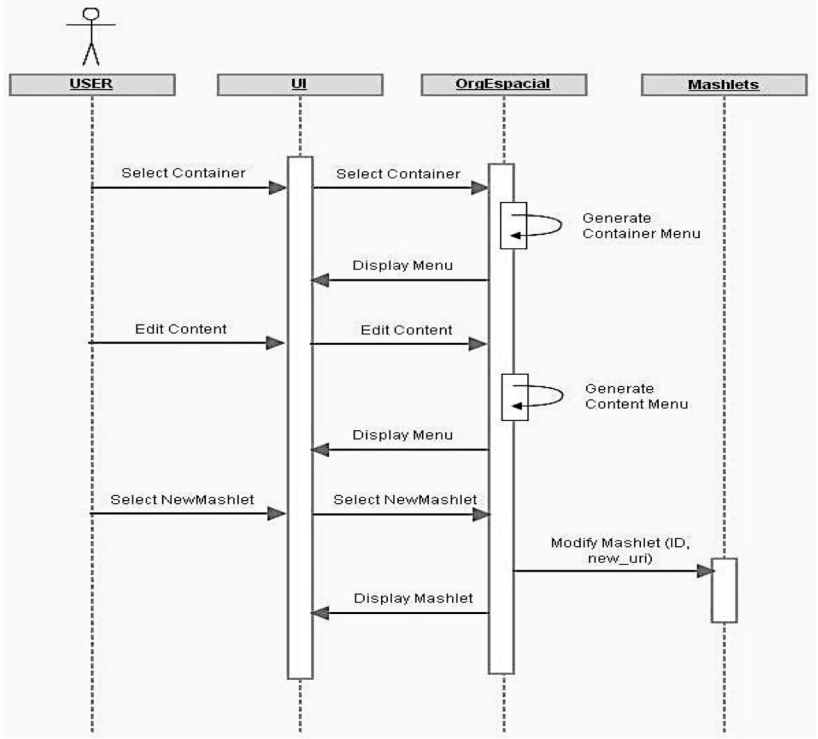
SUNO Functions

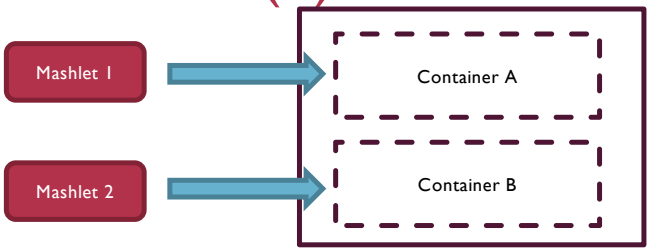
Linking mashlets for producing a mashup (I)

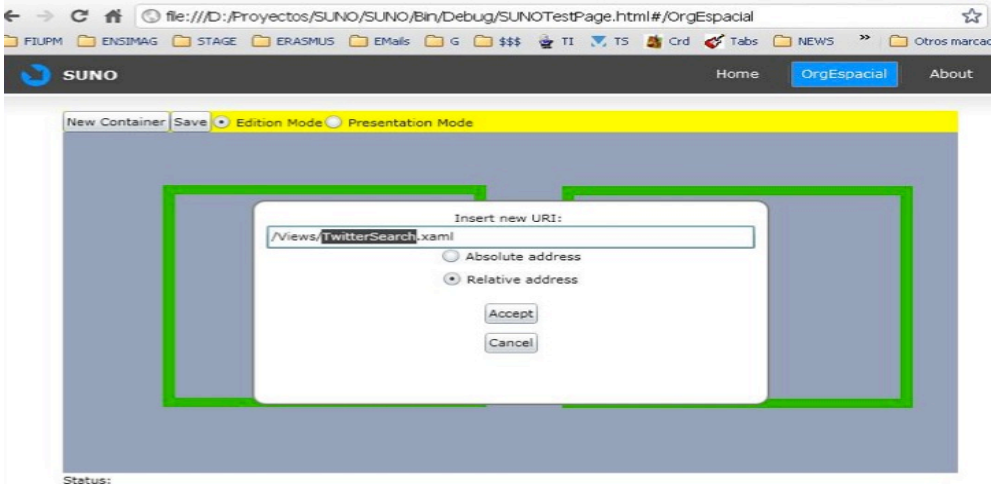


SUNO Functions

Linking mashlets for producing a mashup (II)

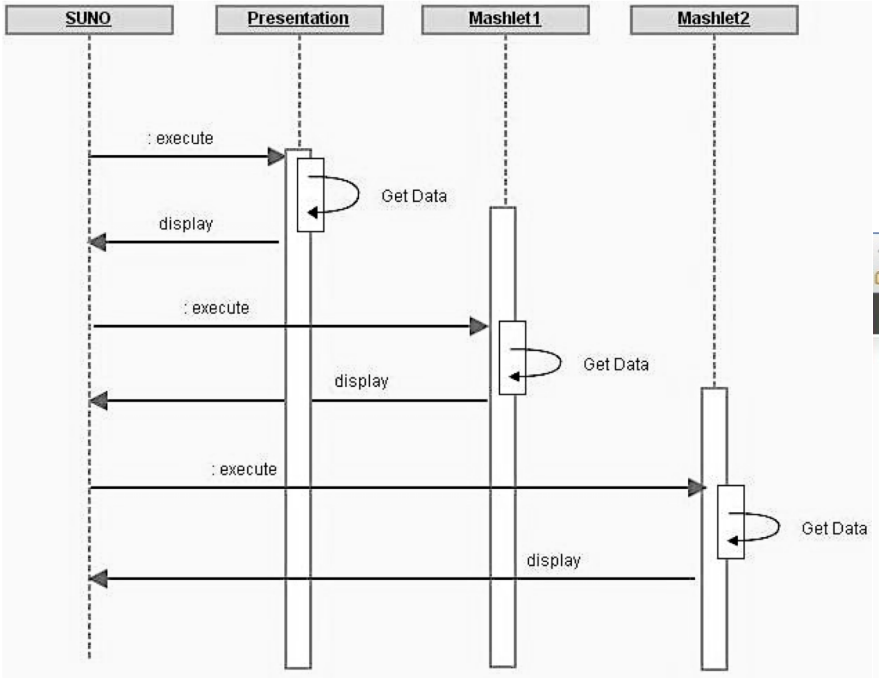


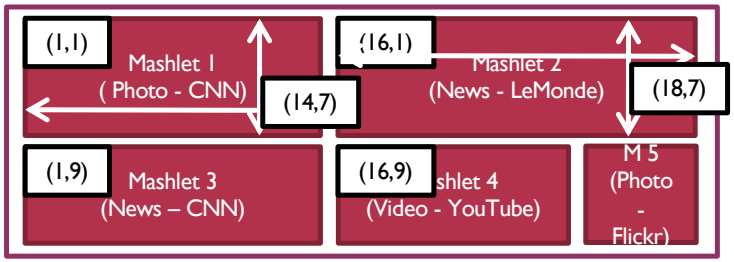


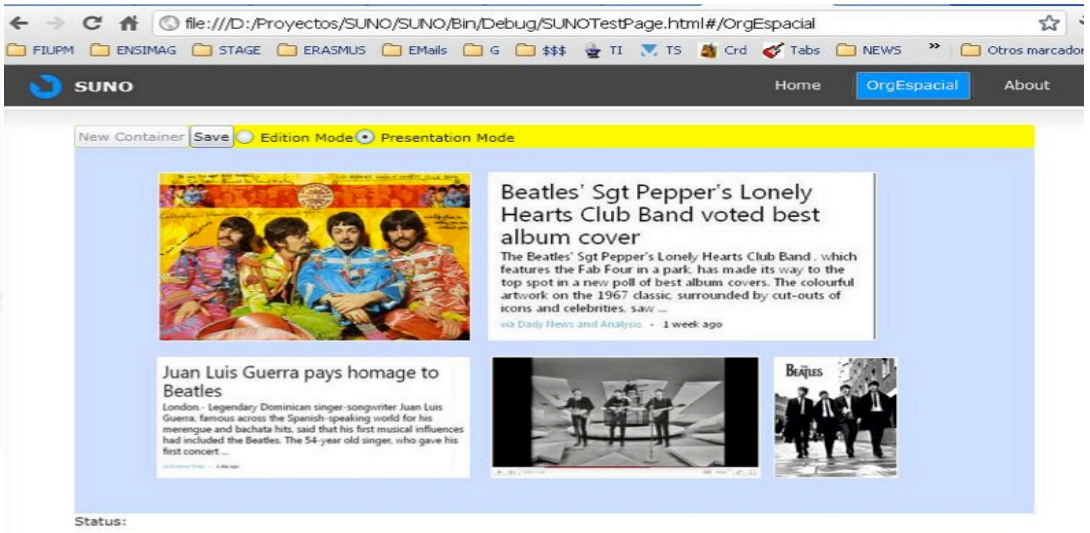


SUNO FUNCTIONS

MASHUP EXECUTION







IMPLEMENTATION ISSUES

- Development platform
  - .NET 4 Platform
  - Silverlight
- Tools and Technologies
  - XAML
  - C#
  - Visual Studio 2010
- Communication Styles
  - RESTful
  - SOAP
- Data Format
  - JSON
  - XML

Thanks