

First ideas about Svom alert distribution :

SvomNet

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Context of the SVOM mission



- SVOM : a French-Chinese space mission
- Launch likely in 2014
- By an Italian rocket Vega from Kourou in French Guyana
- Payload on a mini-satellite developed by Thales
- Purchased by China
- Altitude of the orbit : 630 km, inclination of 30°
- Duration of the mission 3 (+3) years



The members involved in the mission



- Agreement between French & Chinese governments
- A Memorandum Of Understanding was signed
- In France CNES – the space agency – manages the project
- In China Academy of Sciences is in charge
- Equipments are developed by different laboratories
- IRFU has the responsibility of the gamma telescope ECLAIRs
- And of part of the ground segment : The French Science Center



Schedule as of April 2009



| 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-------|----------------|------|-------|--------------|------|------|------|
| Specs | Implementation | | Tests | Exploitation | | | |

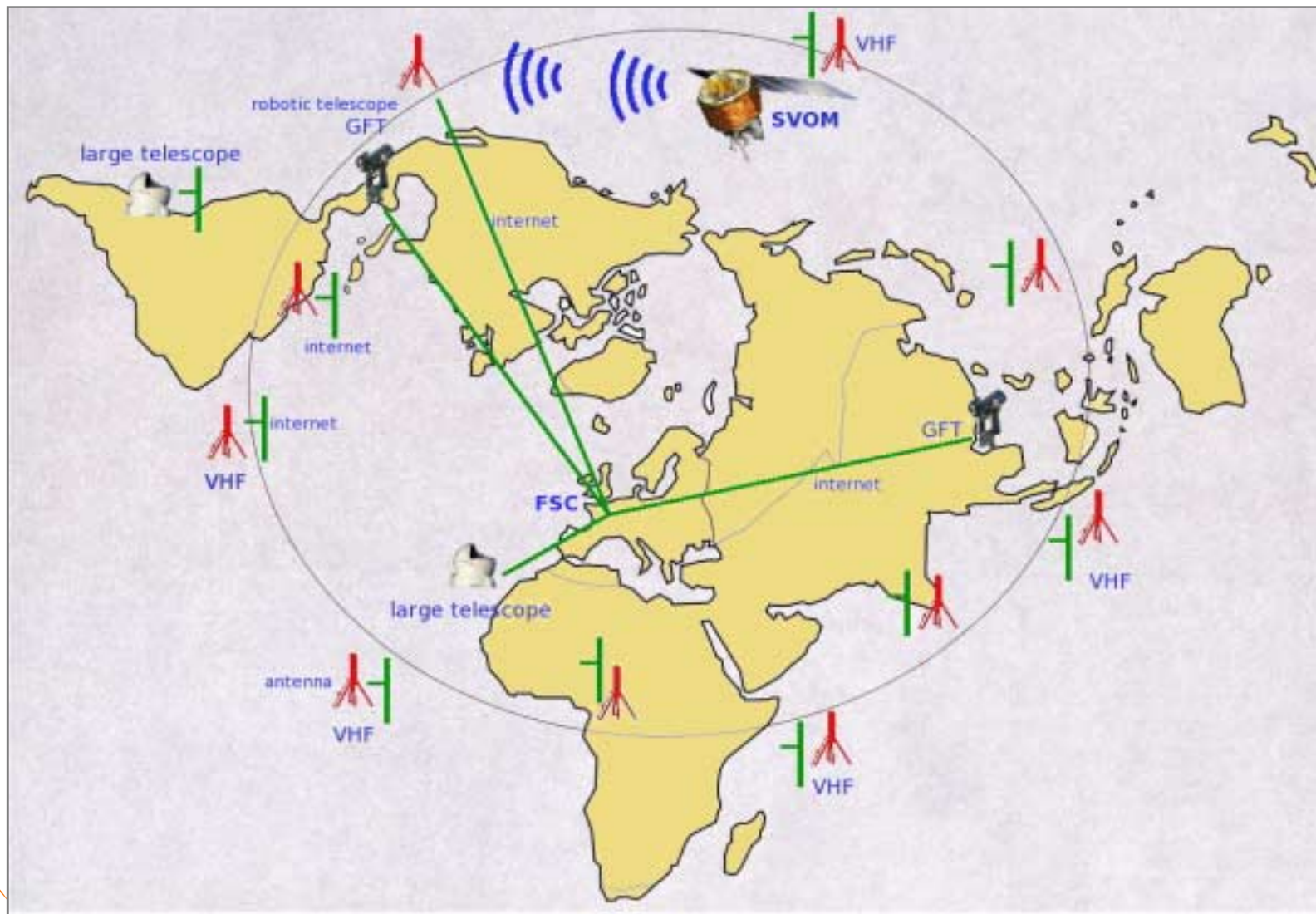
Le FSC should be ready by end of 2012

Launch foreseen in 2014



The FSC at the heart of SVOM

irfu
cea
saclay



The French Science Center

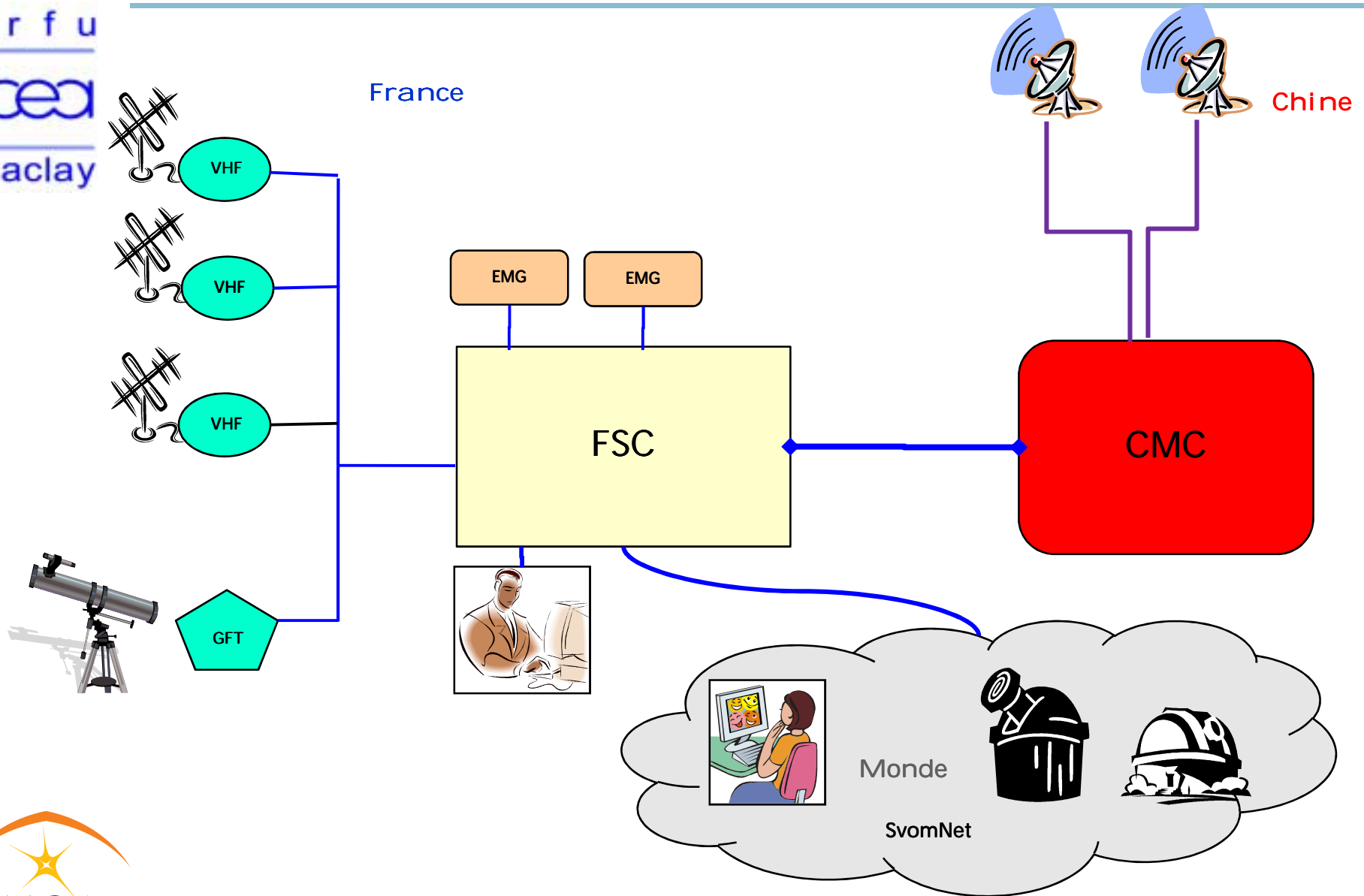


- The *Commissariat à l'énergie atomique* (CEA) is in charge of the FSC development
- The FSC will be settled at Saclay on the outskirts of Paris
- It is one of the main CEA centers, located on the *plateau de Saclay at about 20 km from Paris* downtown

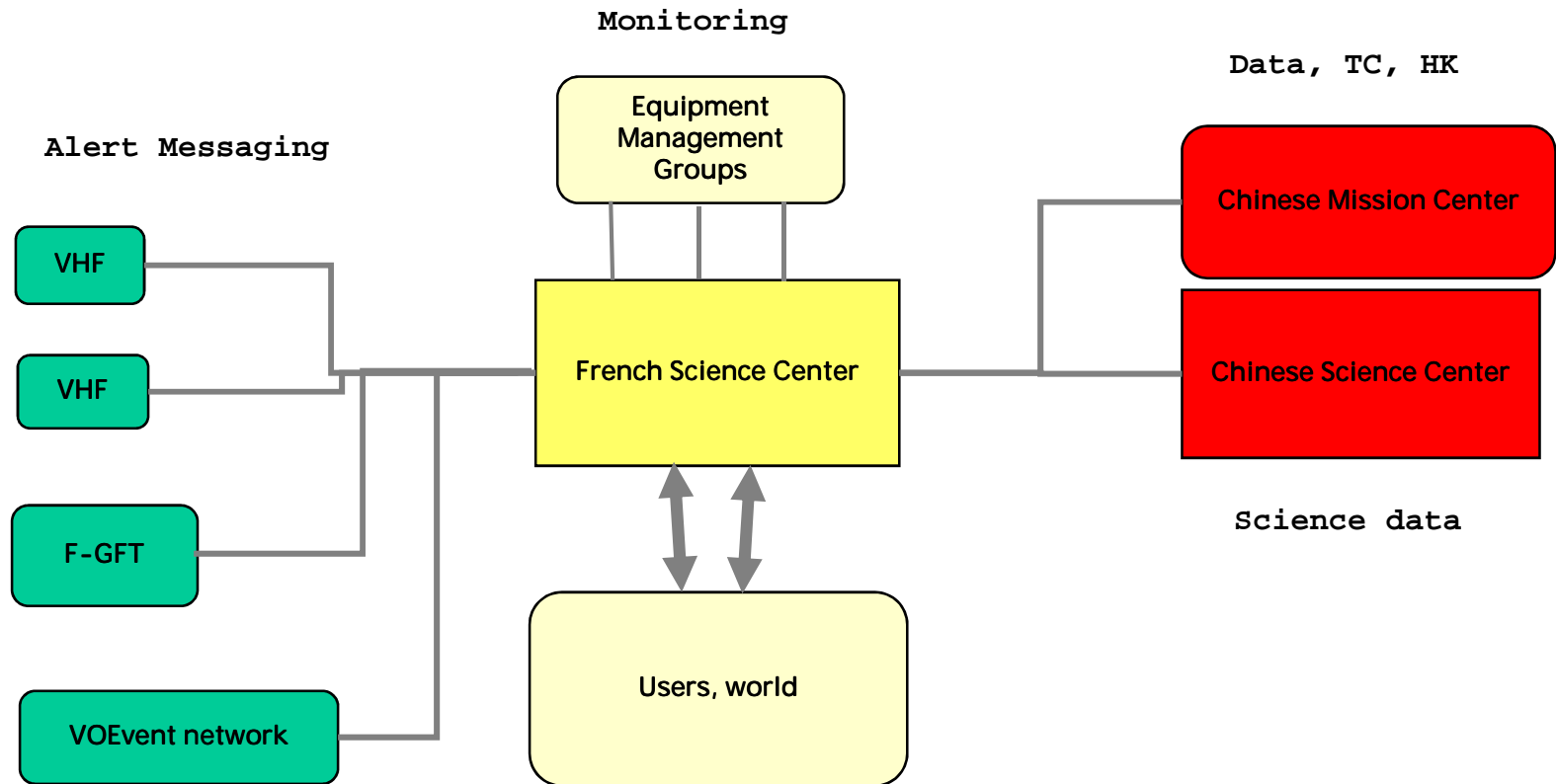


The FSC at the heart of the SVOM world

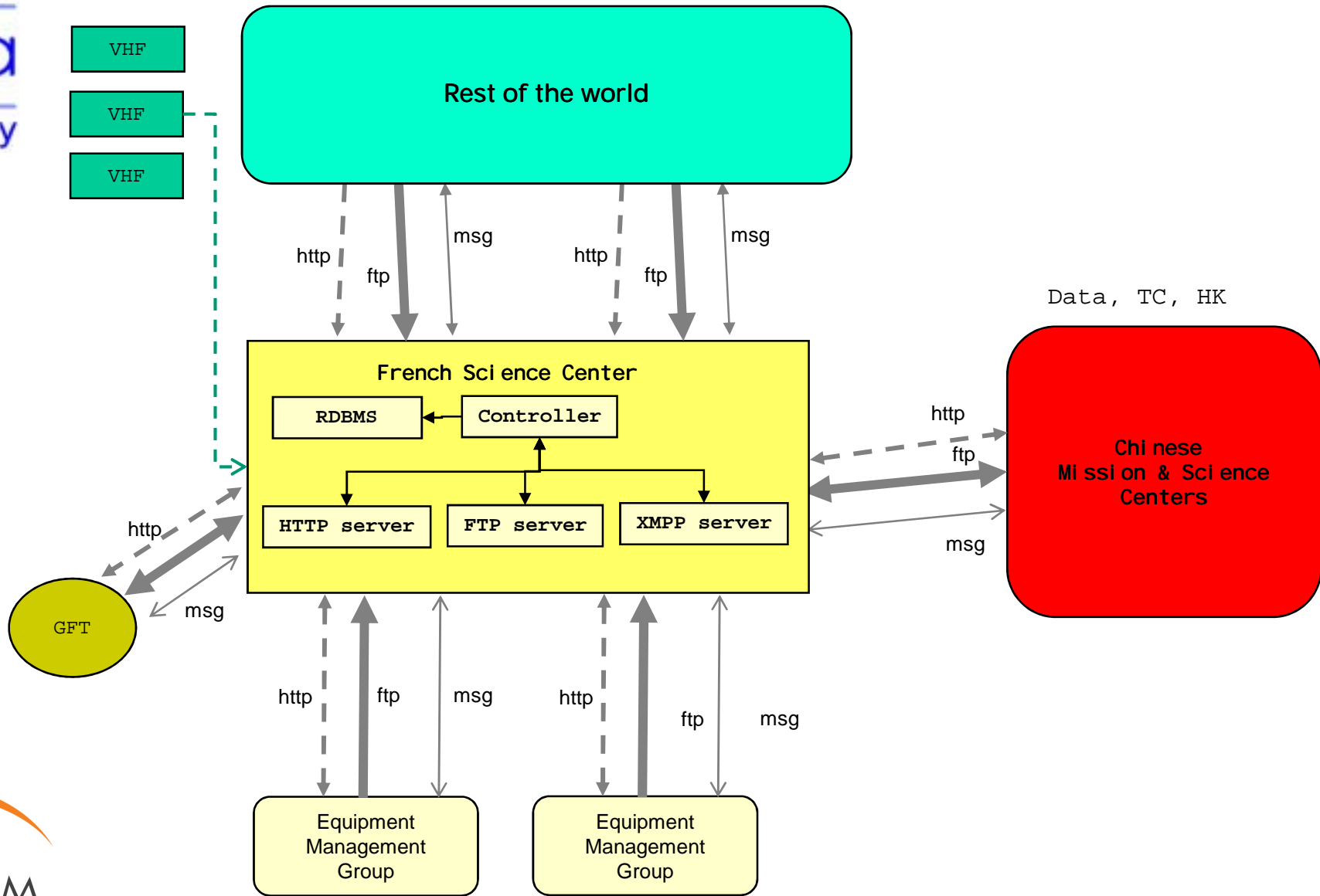
irfu
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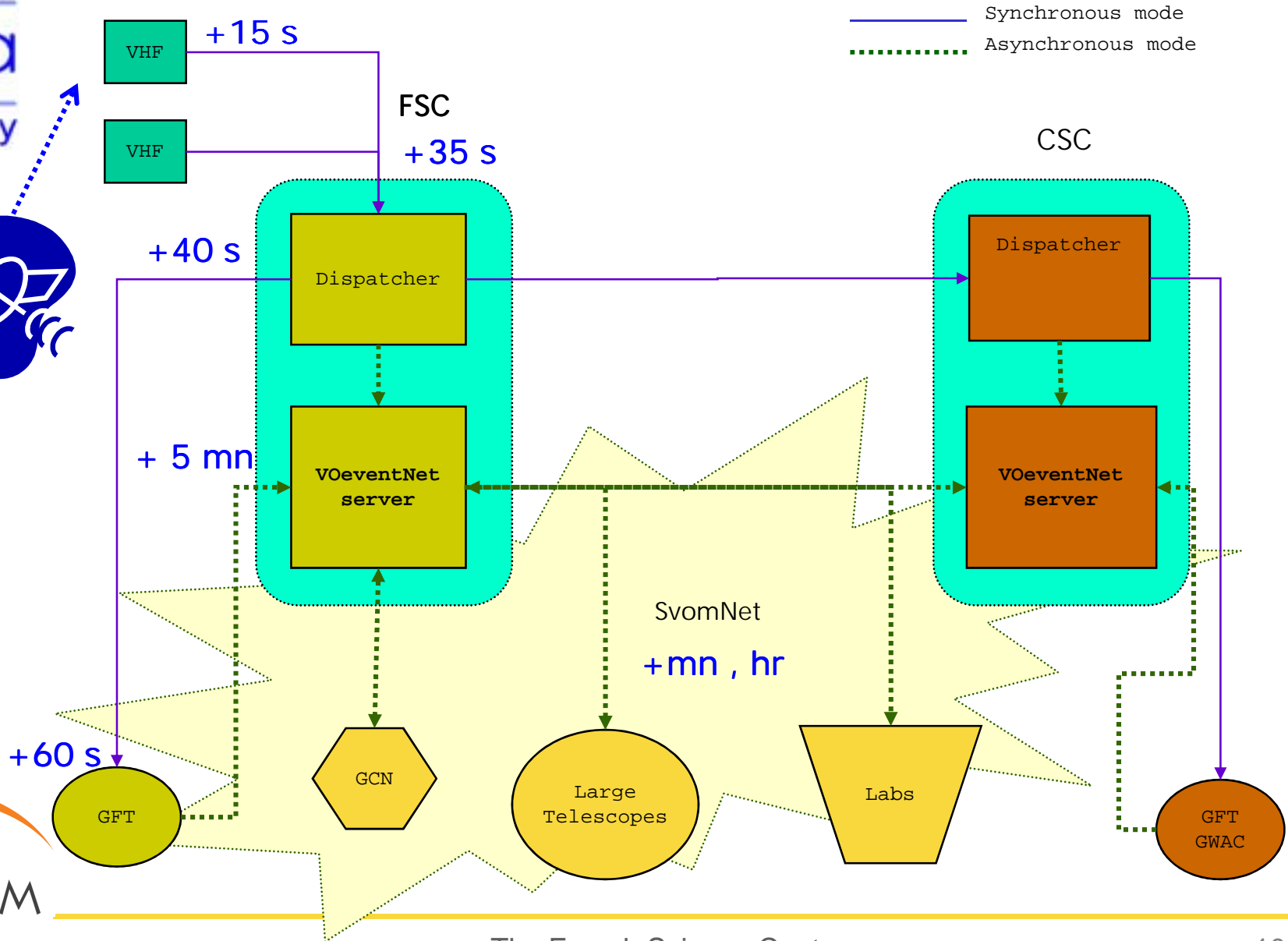
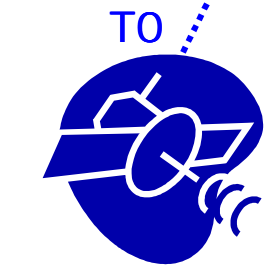
FSC architecture, main interfaces



FSC main interfaces



Alert distribution network



GCN vs VOEvent



- GCN : very successful, broadly used, appreciated by physicists
- But :
 - managed by NASA
 - natural language
 - gamma ray burst only
- VOEvent is what SVOM needs
 - structured data, XML formatted
 - follow up oriented
 - designed for any type of astronomical transient events
 - IVOA recommendation
 - gateway between GCN and VOEvent available



VOEvent transport



- Different protocols may used to broadcast VOEvents
 - XMPP (Jabber) sounds to suit our needs
 - SOAP is used by eStar
 - VTCP (vanilla TCP) is a plain solution
 - RSS may also be investigated
 - SMTP : why not ?
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- They work with XML formatted packets
 - They are widely used
 - They are standardized, RFC are published
 - A lot of tools handling these protocols is available
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- XMPP and its extensions provide functionalities fulfilling most of the SVOM needs



What we plan to do in the coming months



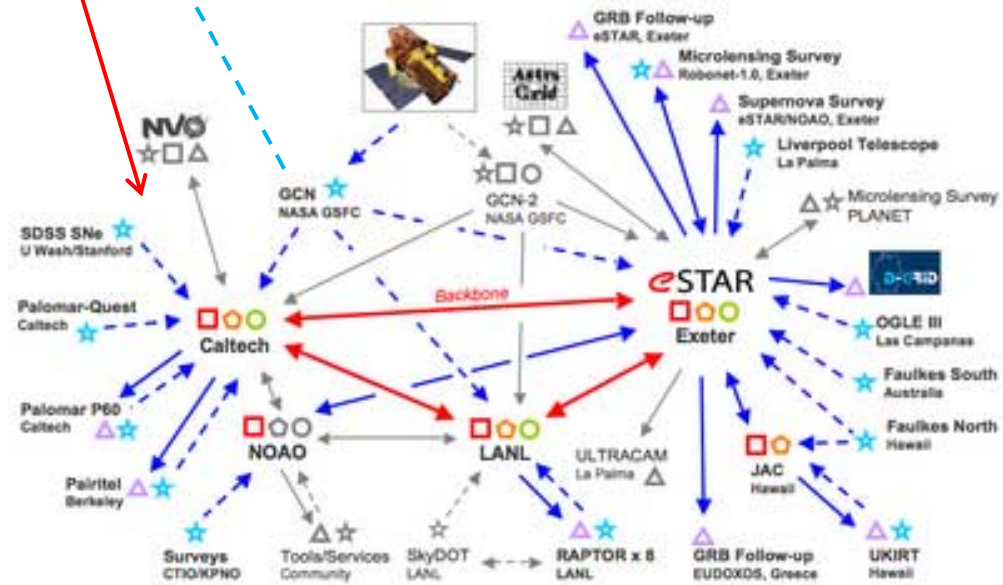
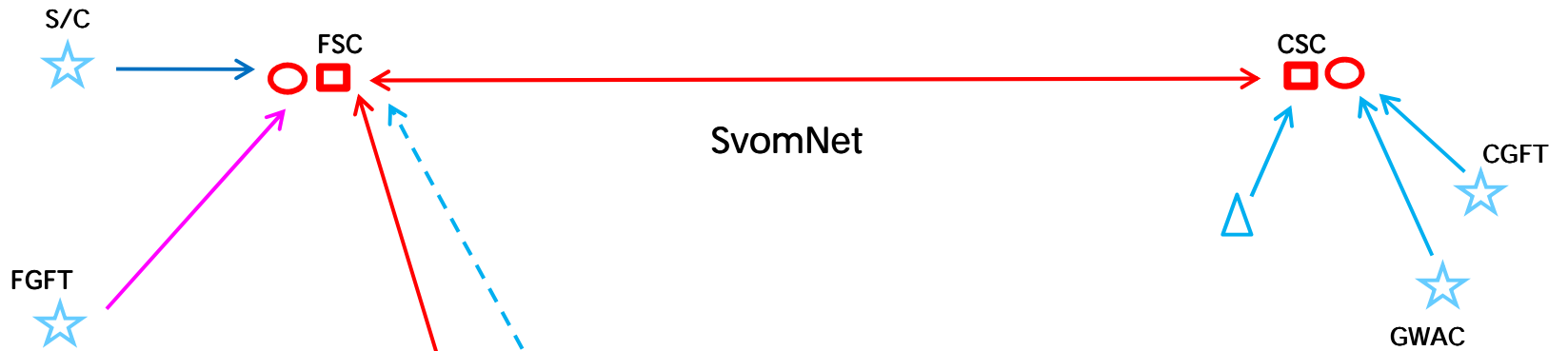
- Apply the VOEvent schema to the Svom events
- Insert SVOM alert data into a VOEvent XML packet

- Implement an experimental distribution system
- One based on VTCP in the spirit of the KISS philosophy
- A more sophisticated one based on XMPP :
 - To evaluate the available servers
 - To see how the protocol is handled
 - To start working on the client side

- Then draw conclusions for SvomNet



SvomNet collaboration



Key Roles
 [Red Square] Publisher [Orange Circle] Filter [Green Circle] Repository [Blue Star] Author [Purple Triangle] Subscriber
Document Type
 ——— VOEvent - - - - - Other
Implementation Status
 ——— Backbone - - - - - Operational ····· Planned



Then ...



- Keep on working on SvomNet :
 - Protocol : push vs pull approach ?
 - Alert data sharing between France and China
 - Relations with other nets : VOEventNet, eStar, etc.

- Start working on A n A :
 - Authentication : who's who ?
 - Authorization : who does what ?

- Web site (*in construction*) : [http//www.svom.fr](http://www.svom.fr)

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