



Visualiser vos systèmes mécatroniques pour maîtriser le changement et l'innovation



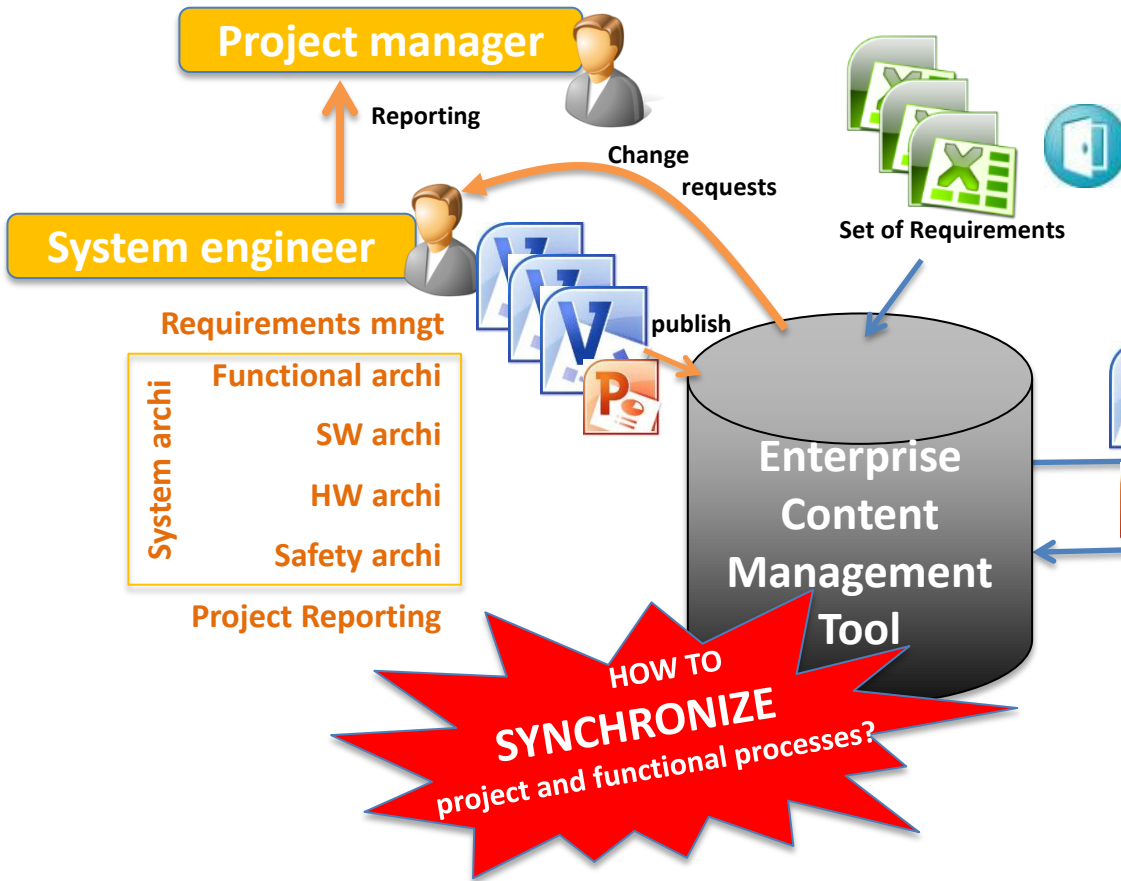
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KnowledgeInside
 arKItect your system



Problem at hand

COMMUNICATE



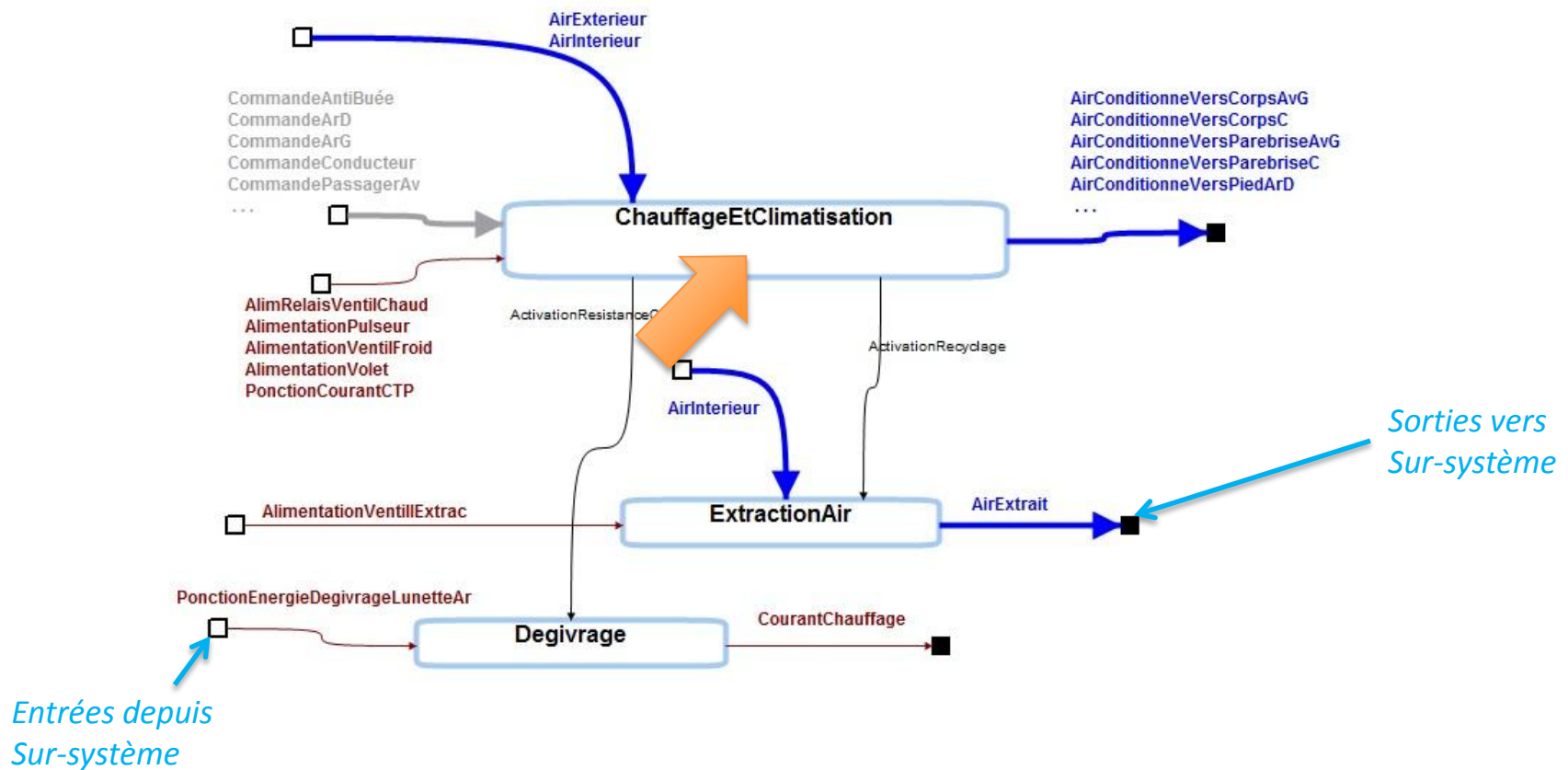


Principe de la solution

- ➔ Intégrer toutes les informations dans une architecture multidisciplinaire unique stockée dans une base de donnée
- ➔ Pouvoir s'adapter au projet:
 - Langage visuel, langage naturel, acceptés par les équipes
 - Complexité du projet
 - Niveau d'innovation
 - En interface avec l'existant



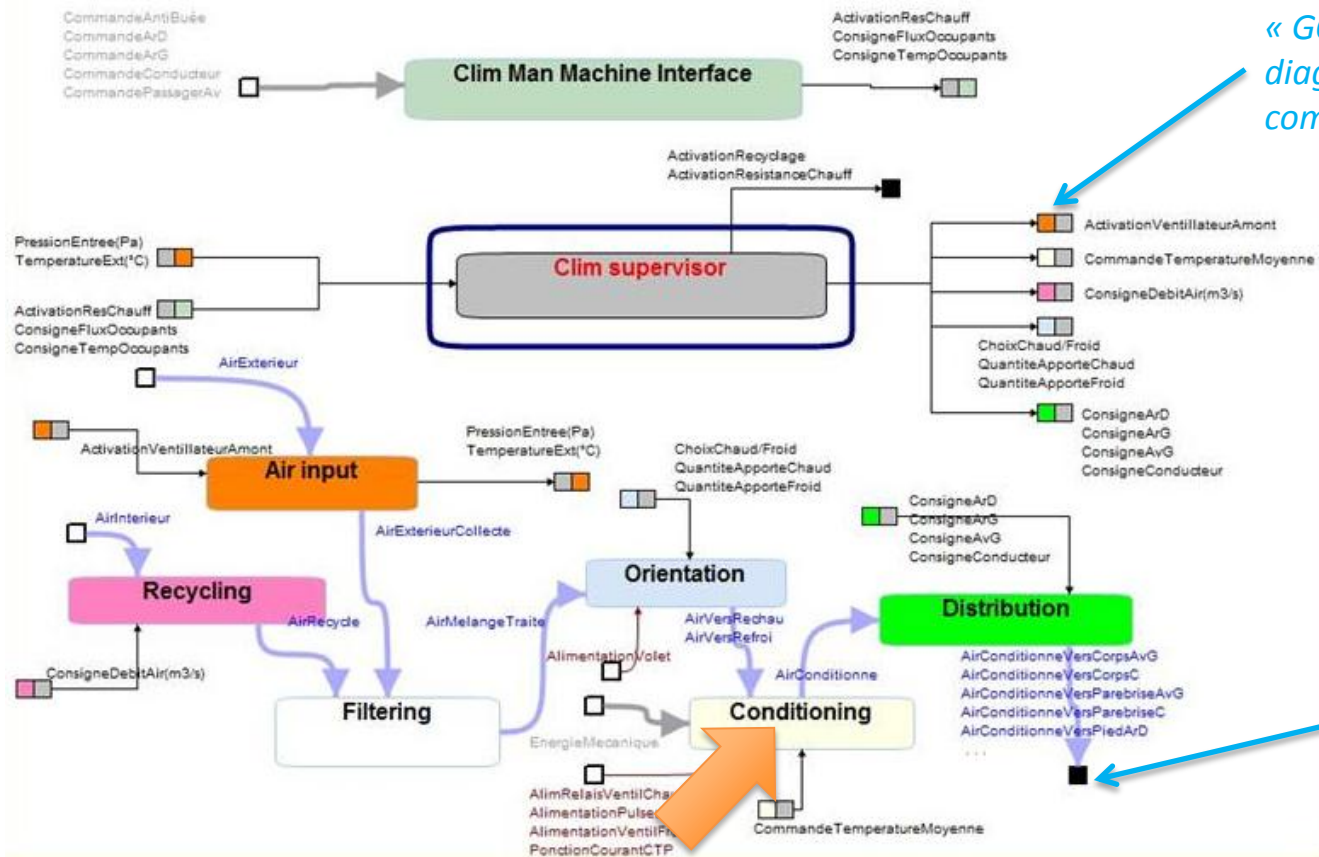
Exemple





Focus sur Chauffage et Climatisation

System: ChauffageEtClimatisation

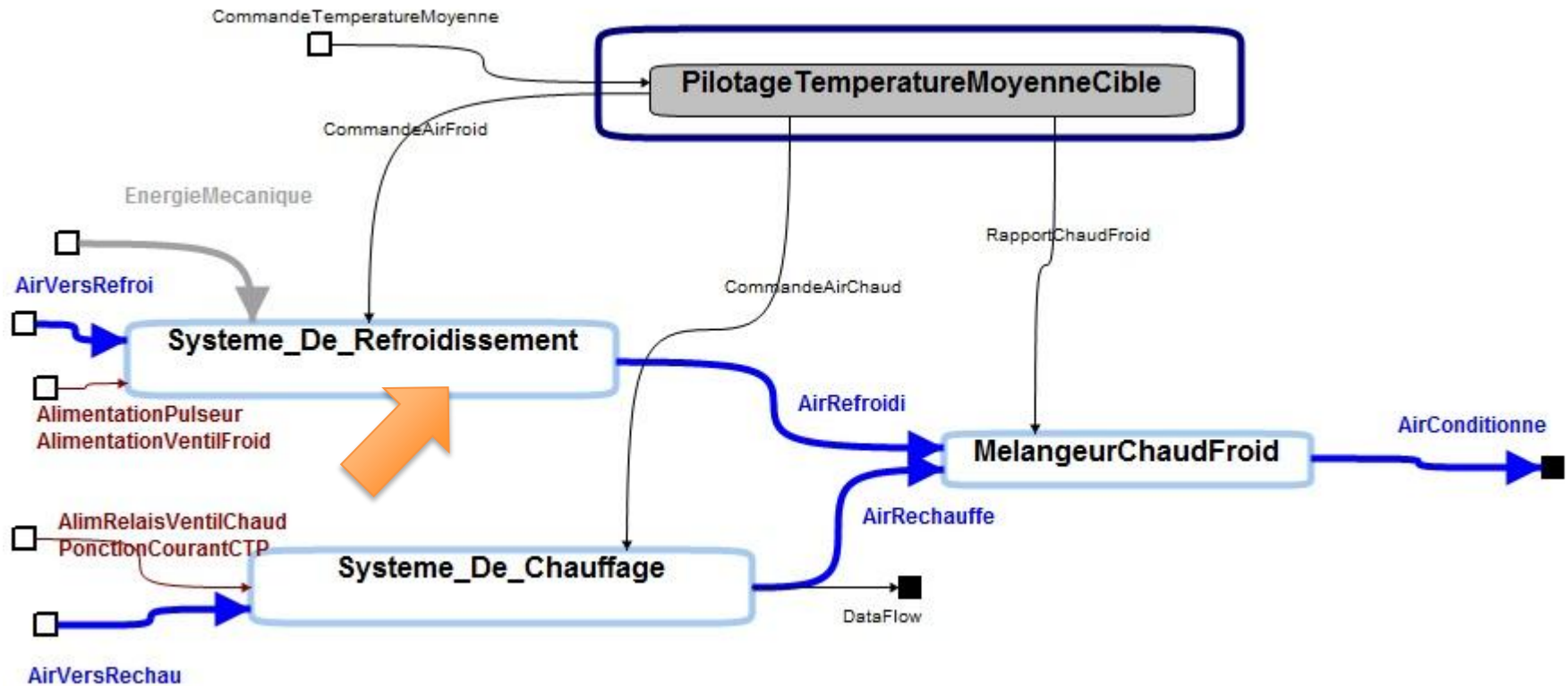


« GOTO » pour diagrammes complexes

Sorties vers sur système



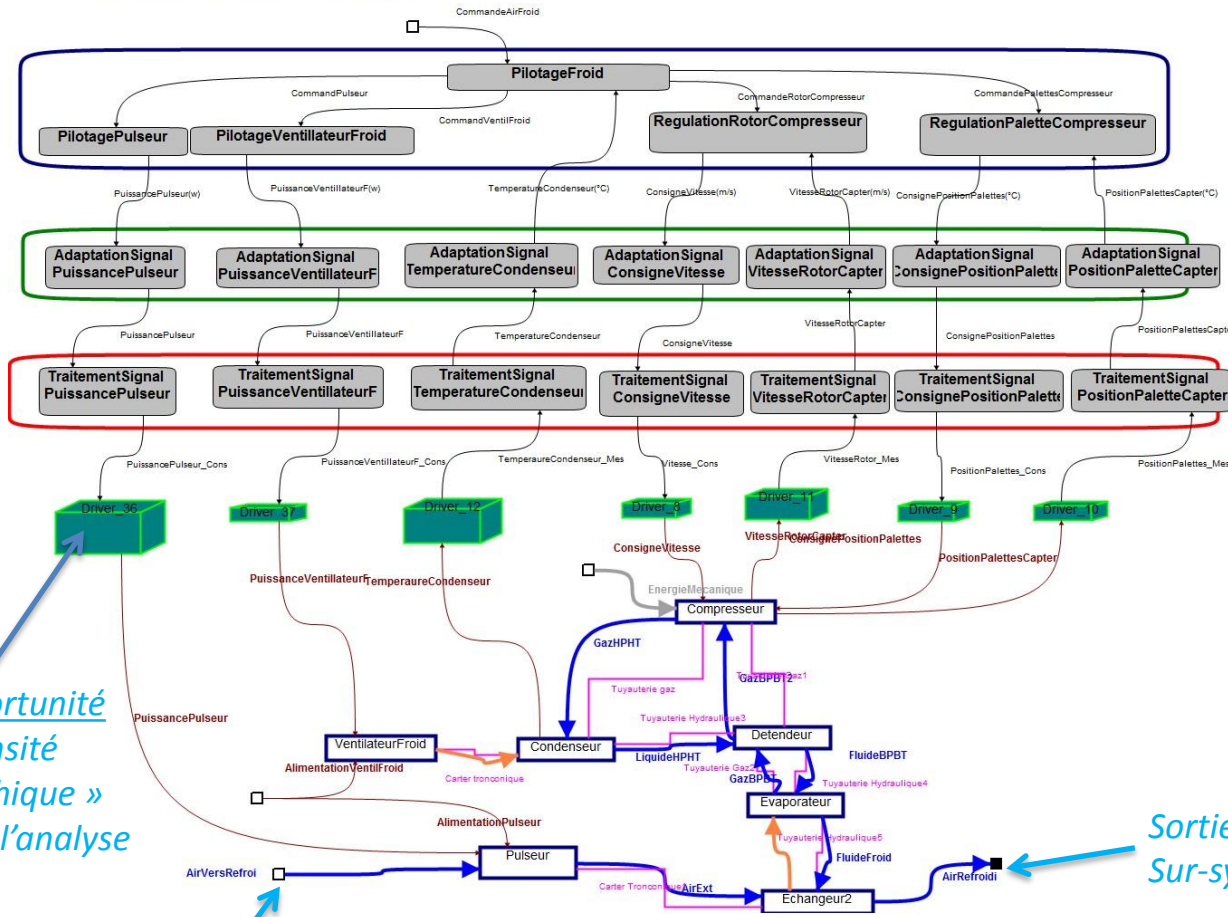
Focus sur le conditionnement





Focus sur le refroidissement

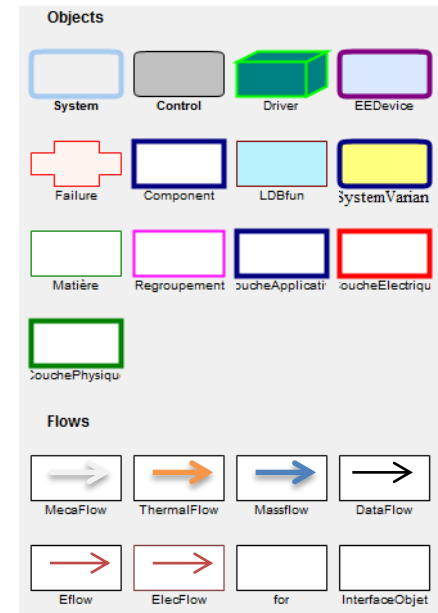
System: Systeme_De_Refroidissement



*Opportunité
« densité
graphique »
pour l'analyse*

*Entrées depuis
Sur-système*

*Sorties vers
Sur-système*

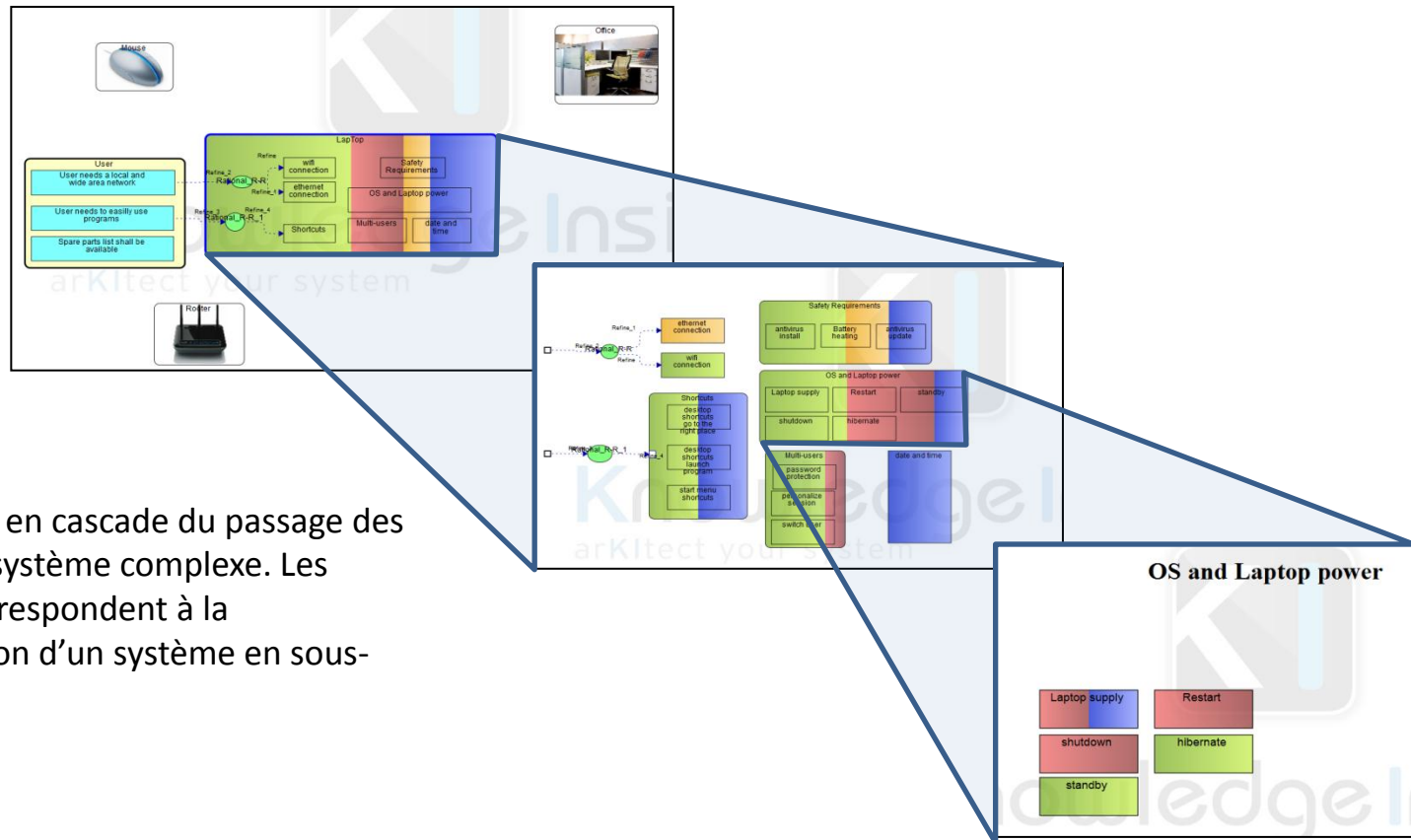


Légende

*Etapes ultérieures:
architecture EE et
allocation*



Ouverture vers la « business intelligence » système



Visualisation en cascade du passage des tests sur un système complexe. Les cascades correspondent à la décomposition d'un système en sous-systèmes.



Synchronization of processes with arKItect

COMMUNICATE

Project manager

Reporting

System engineer



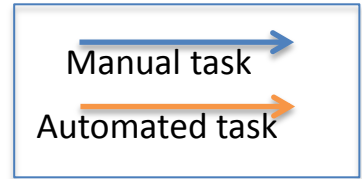
Design System architecture



Set of Requirements



arKItect
SEA
database



PRODUCE

FUNCTIONAL TEAMS « METIERS »

Product mngt
Simulation
Software
Networks
Wiring
Electronics
Components
Validation
Safety
.....

Benefits:

- automated specification production
- Aided generation and maintenance of complex diagrams
- Automated consistency checks
- Requirements and architecture alignment and traceability
- Automated Indicators synthesis

Functional teams benefit from:

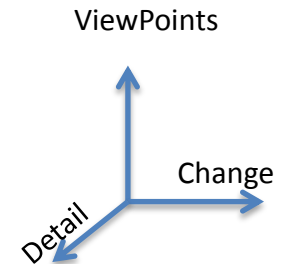
- Weekly updated specification and interface (excel + pdf) for their own system scope; changes description
- Efficient access to project information (architecture)





Knowledge Inside solutions

- ➔ A tool suite: arKItect
 - allows designing the viewpoints
 - allows visualizing the viewpoints, their details, their changes
 - checks data consistency
 - includes a programmable interface allowing
 - > easy connection to legacy tools and data
 - > production of documents
 - > specific computations or exploitation of viewpoints
 - > generation of new viewpoints
 - Supports projects data configuration management
- ➔ Scalable off the shelf arKItect Configurations: System Engineering Basics (SEB), System Engineering Essential (SEE), System Engineering Advanced (SEA), Safety add on,...
- ➔ Service to integrate or interface your legacy tools and data with our tools and boost projects start
- ➔ Consulting to adapt arKItect platforms and COTS Configurations to your organization and processes
- ➔ System engineering expertise for system architects and system engineers



The diagram illustrates a network system architecture. A central Laptop is connected to four components: a Mouse, a Router, a Screen, and an Office environment. The connections are as follows:

- Mouse:** A green line labeled "Position of the mouse" connects the Mouse to the Laptop.
- Router:** A blue line labeled "Internet WIFI connection" and "Internet cabled connection" connects the Router to the Laptop.
- Screen:** A green line labeled "Graphical connection response" connects the Screen to the Laptop. A blue line labeled "220 V supply for screen" connects the Screen to the Office environment.
- Office environment:** A blue line labeled "220 V supply for screen" connects the Office environment to the Laptop. A green line labeled "Graphical data" connects the Office environment to the Laptop.

System: LapTop

```

graph TD
    subgraph CaptureInternet [Capture internet signals]
        direction LR
        C1[Capture the WiFi signal] -- "Captured WiFi signal" --> C2[Interpret internet signals]
        C3[Capture the caberd internet connection signal] -- "Captured caberd internet connection signal" --> C2
    end

    IWC[Internet WiFi connection] --> C1
    IC[Internet caberd connection] --> C3

    C2 -- "Internet settings" --> IS[Internet settings]
    IS --> SE[Supply the LapTop]
    IS --> ME[Manage external entries]
    IS --> PC[process data and compute]
    IS --> MG[Manage graphical data]

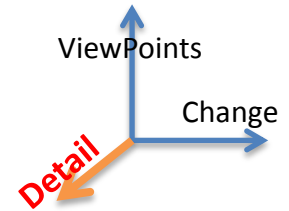
    SE -- "On-Off" --> PC
    PC -- "Graphical connection response" --> GR[Graphical connection response]
    PC -- "graphical info" --> MG
    MG -- "Graphical data" --> G[Graphical data]

    ME -- "External data" --> SD[Store data]
    SD -- "processed data" --> PC
    PC -- "external info" --> ME
  
```

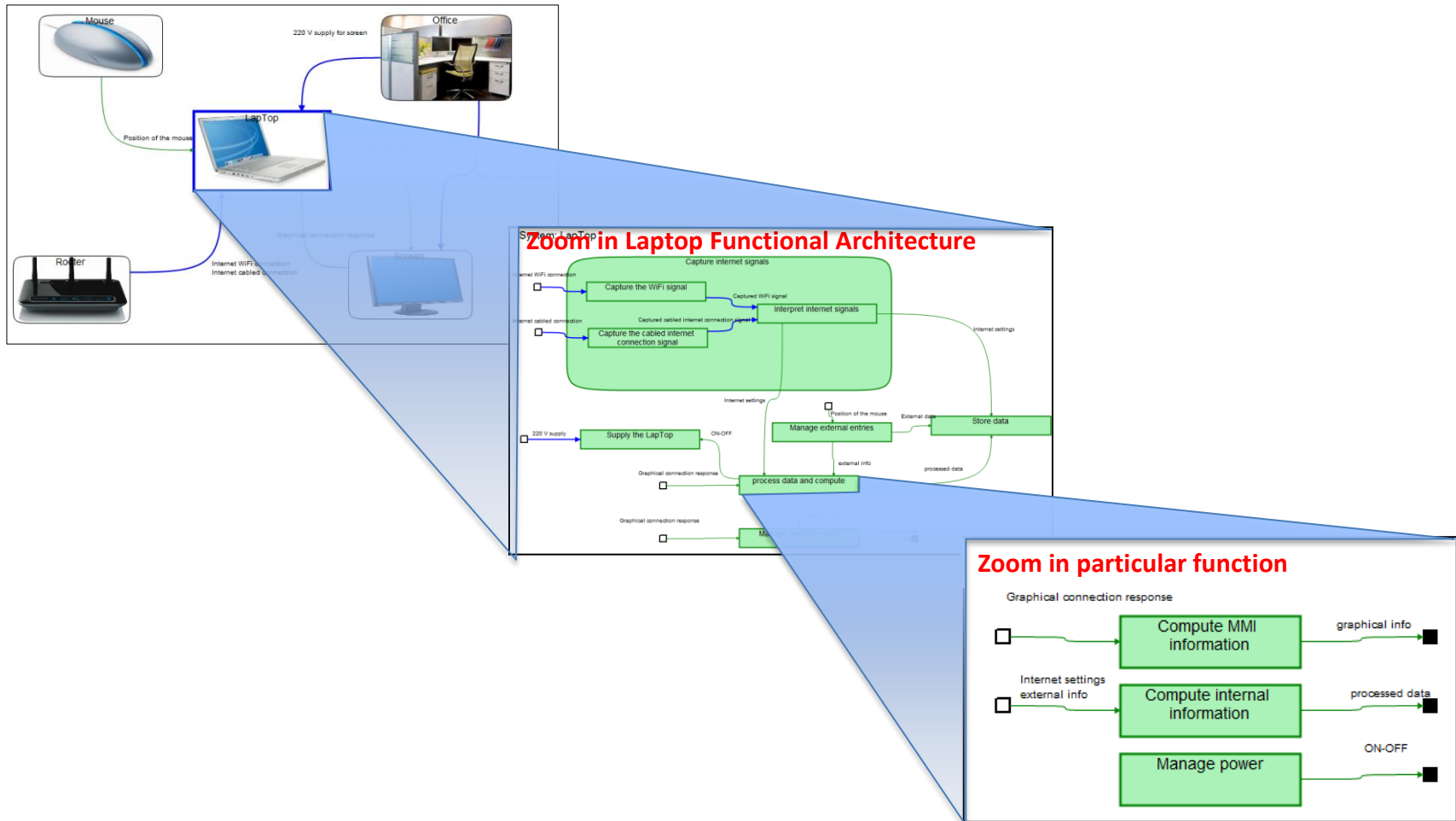
The diagram illustrates the architecture of a laptop system, centered around a 'LapTop' box. Internal components include a 'Calculator', 'Hard disk', 'Battery', 'Network card', 'Motherboard', 'PCI Interface: NIC', 'PCI Interface: W/C', 'WiFi card', and 'Graphical card'. External peripherals are connected via various cables: a 'Mouse' (USB cable), 'Ethernet cable', 'Router', 'Electrical cable', 'Electrical cable 2', 'Screen', and 'VGA cable'.



Refinement of ViewPoints illustrated



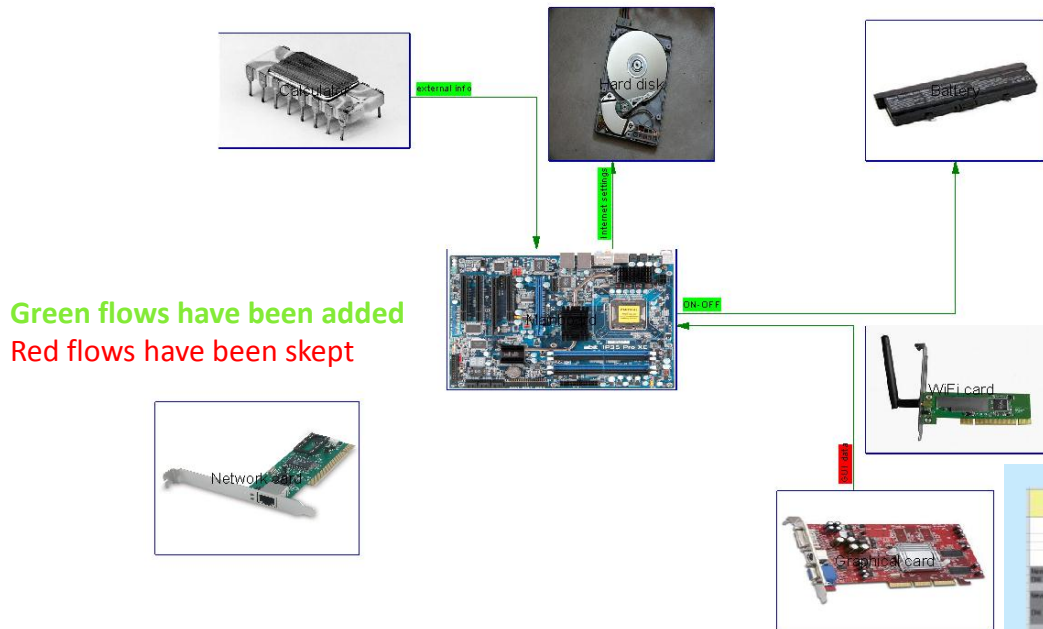
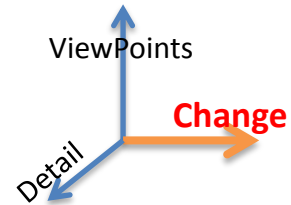
Laptop functional interface



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Changes in ViewPoints illustrated



Artifact	State	Requirement type	Requirement title	Requirement description	Parent requirements or aspects	Children requirements	Impacted function (with trace)	Impacted component	Component (Device)
Added Requirements									
REQ_LTP_0345	In analysis	Safety Requirement	Battery heating	Battery shall not overheat	REQ_LTP_0311		with the Laptop	Battery	
Changed Requirements									
REQ_LTP_0300	In analysis	Functional requirement	standby	The Laptop shall have a standby state. The user shall have a standby time.	REQ_LTP_0302		Manage power	Hardware	Hardware
REQ_LTP_0308	Validated	Functional requirement	password protection	each user shall be able to protect his data with a password.	REQ_LTP_0302		Manage power	Hardware	Hardware
REQ_LTP_0309	Validated	Functional requirement	password protection	each user shall be able to protect his data with a password.	REQ_LTP_0302		Complete internal information	Hardware	Hardware
New Requirements									
REQ_LTP_0311	In analysis	High level	Safety Requirements			REQ_LTP_0312 REQ_LTP_0313 REQ_LTP_0314			
REQ_LTP_0312	In analysis	High level	Safety Requirements			REQ_LTP_0313 REQ_LTP_0314			
REQ_LTP_0313	In analysis	High level	Shortcuts	Laptop shall allow user to utilize shortcuts to access programs.	REQ_LTP_0317				
REQ_LTP_0314	In analysis	High level	Shortcuts	Laptop shall allow user to utilize shortcuts to access programs.	REQ_LTP_0317				
Removed Requirements									
REQ_LTP_0346	Original	Functional requirement	keyboard shortcuts	The user shall be able to access programs using keyboard shortcuts.	REQ_LTP_0313				



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