ODG

1. WP1 (mazzitelli)
   - comunicazioni
   - presentazione progetto
   - discussione
2. WP2 (bisegni)
   - strumenti collaborativi
   - esplosione attività
3. WP3 (michelotti)
   - ADF
   - (fogetta/andreotti) attività di sviluppo BTF
4. WP4 (salina)
   - nop
5. WP5 (CNAF/Calcolo)
   - nop

- spostamento della data della riunione
- vvee

- incontro Pistoni/Mazzitelli/Dosselli
  - collaborare con il Centro di Calcolo per la definizione degli interessi nel progetto, la partecipazione ad attività e quindi la definizione delle risorse necessarie.
- risposta Giunta:

1) data di partenza

da quando ci arrivano i fondi dopo l'approvazione da parte della Corte dei Conti

2) % trattenuta dall'infn, che spero sia ridotta zero per la sostenibilità del progetto e visto il taglio.

30% come inizialmente comunicato

3) voci di costo del personale (in particolare si possono fare contratti oltre gli assegni)

In linea di principio sì, ma la politica dell'INFN è di limitarli al massimo, quindi solo in casi eccezionali

4) se ci sono limiti alla rassegnazione dei costi nelle vari voci di spesa per il progetto esecutivo

direi di no

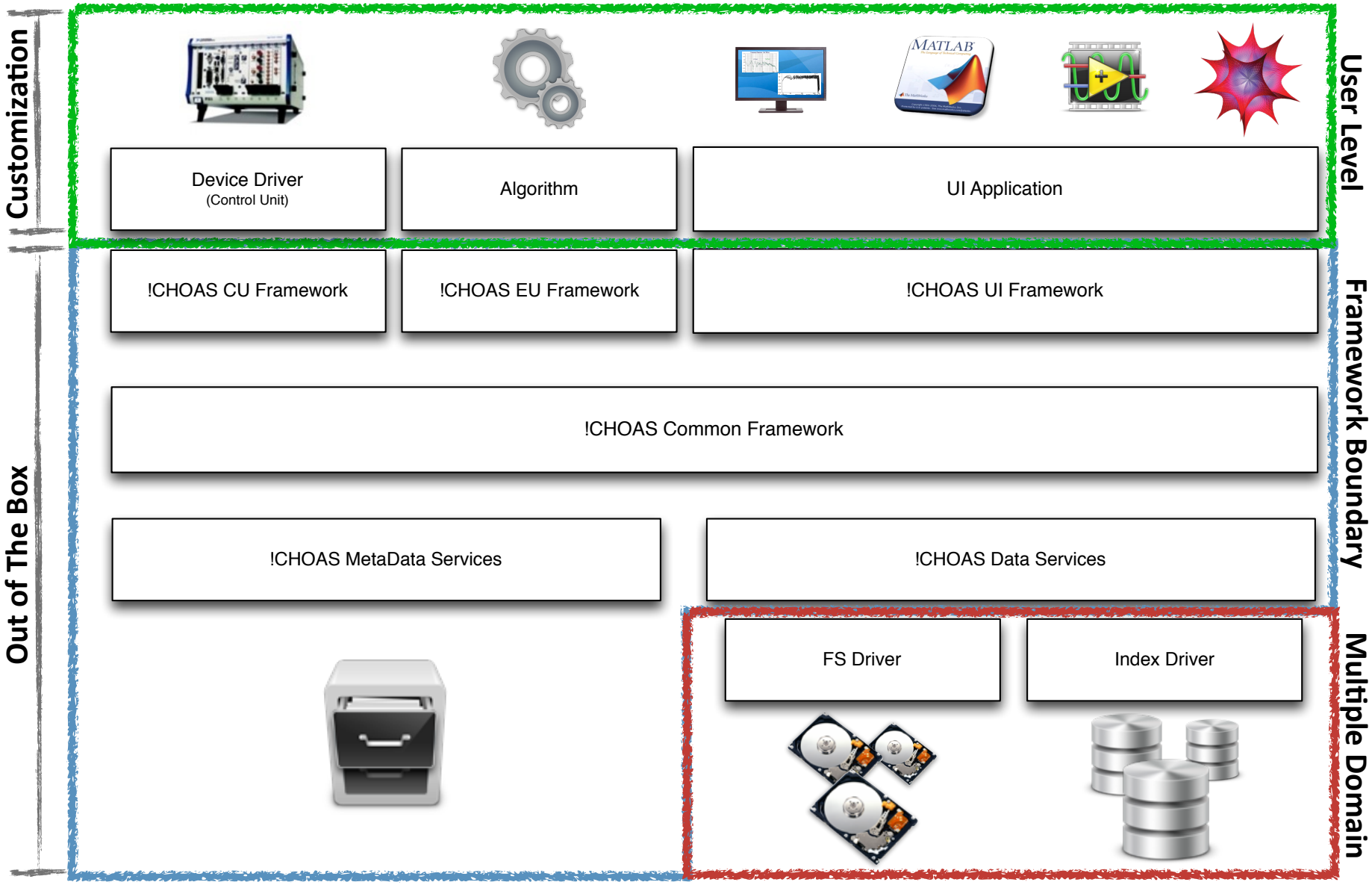
5**) rendicontazione del progetto**

al momento non è prevista

- definizione del lavoro con il CNAF/WP5
  - phoneconference prevista per il 20/1 ore 11.00
- definizione del lavoro TV/WP4
  - riunione prevista per il 23/1 mattina
- definizione lavoro LNF/NI/ESCO/WP3
  - ADF riunione 16/1 (michelotti)
  - NI riunione 16/2 ore 19 aeroporto Leonardo Da Vinci

introduzione

Conceptual layout



Status of the project

- CU toolkit prototype ready
- UI toolkit prototype ready
- MDS java simple prototype ready, but we want to rewrite in C++
- Live data prototype ready
- EU toolkit under development
- History data under development

L'obiettivo **comune** che ci siamo posti fin da fine dicembre e' quello di scalare il premiale e quindi tutto il progetto !CHAOS a qualcosa di **realizzabile nei tempi e con le risorse a disposizione**

(13/12/2013 https://agenda.infn.it/categoryDisplay.py?categId=673)

Progetto

Del. no.	Deliverable name	Delivery date
M5.1	Implementation of the hardware infrastructure	Month 2
M3.1	Definition in collaboration with WP4 the software and hardware specification and requirements	Month 4
M4.1	Definition in collaboration with WP3 the software and hardware specification and requirements	Month 4
M2.1	Common Framework	Month10
M2.2	Metadata Service	Month10
M2.3	Live and History Data Services	Month10
M2.4	Control Unit, Execution Unit and User Interface	Month10
M5.2	Implementation of cloud IaaS and PaaS services and infrastructure	Month10
M 5.3	Access Policies implementation	Month10
M2.5	Test and Qualification of all the Service	Last Month
D2.1	D2 !CHAOS as a service	Last Month
M3.2	LabVIEW® and Tango compatibility layers at driver and/or GUI level	Last Month
M3.3	Integration of !CHAOS in LabVIEW® framework	Last Month
D3.1	Realization of a control system dedicated to ESCO use case	Last Month
D3.4	Prototype of critical elements of FP control system	Last Month
D 4.1	ESCO HRP	Last Month
D 4.2	FP HRP	Last Month
D 4.3	Prototypes hub and gateway	Last Month
M 5.4	Qualification, testing and documentation	Last Month
D 5.1	Implementation of a cloud based infrastructure	Last Month
D1.1	Final management report, edited in accordance with the reporting guidelines	End of project + 90 days

Task 2.1 – Common Framework (Task leader Claudio Bisegni)

The task have in charge to develop a set of API and logic in order to realize the following procedure:

- Node reconnection logic is needed to take care of the alive node in the system; it's handle the point to point node connection, and the reconnection in live mode when necessary.
- Realize a set of instruction (commands) in order to guarantee the controls of a finite state machine nodded in most of hardware drivers and some controls algorithms.
- Group lock mechanism permits the exclusive usage and handle of specialized procedure in the system, as device drivers, algorithms or user interface application.
- Develop a data stream API in order to allows the direct streaming among different instances of nodes.
- Test, release and qualification in open source of the updated software.

Task 2.2 - Metadata Services (Task leader Ramon Orrù under 35)

This task is dedicated to organize all the information system of the instances of any node. In order to implement !CHAOS as services this is one of the core part to be developped, in particular:

- Improve the instance registration to manage more features;
- Include the management of the locking request.
- Improve the API to retrieve instance (data structure, topology, grouping, etc) information.
- Management of the Execution Unit
- Test, release and qualification in open source of the updated software.

Task 2.3 - Live and History Data Services (Task leader Loredana Viviano)

This task is aimed to the development of the services for live and history data, by the production of the software for the implementation of: data proxy, data indexer and storage management. This will be allow to optimize the insert and query of booth live data, used for monitor and control, and history data designed to manage the long term storage and high throughput.

Task 2.4 – Control Unit, Execution Unit and User Interface (Task leader Flaminio Antonucci under 35)

This task is dedicated mainly to the development of the toolkit needed for the creation and execution of logical algorithms encapsulated in the Execution Unit: instance creation and managements, connection to other instance node, and development of some general and useful implementation as feedbacks, math library, etc, etc. Moreover, the task is also dedicated to optimized CU and UI node for users. The CU is completed while the UI need more development in order to: improve the handshake, security, and locking among the instance; produce a general API to interface the most common standards.

Task 3.1 !CHAOS implementation for ESCO (Task leader Sandro Tomassini for INFN and Zagaroli Marco as software developer for ADF Solaris - under 35)

The aim of this task is to develop a set of !CHAOS drivers and interfaces for the ESCO use case. This task envisages the following steps:

- Linux customization and cross compilation setup for the selected HW target
- !CHAOS Control Unit driver development for temperature, humidity, flow sensors, actuators (pump, heat exchangers);
- !CHAOS Execution Unit that implements the control algorithm;
- GUI for the ESCO use case;
- Deploy, test and qualification.

Task 3.2 !CHAOS implementation for FP (Task leader Andrea Michelotti)

The aim of this task is to develop a set of !CHAOS drivers for critical prototype of the FP use case. This task envisages the following steps:

- Linux customization for the selected HW target;
- !CHAOS Control Unit driver development of some generic classes of devices used in particle accelerators (eg. Low Level RF, performing BPMs, fast LINAC control I/O, etc.)
- !CHAOS Execution Unit that implements the control algorithm;
- !CHAOS UI that implements a control GUI;
- Deploy, test and qualification of the Control Unit in DAFNE or SPARC accelerator at the LNF INFN laboratories.

Task 3.3 LabVIEW® & Tango compatibility layer (Task leader Francesco Galletti for INFN and Massimiliano Banfi contact for National Instruments)

The aim of this task is to write two compatibility layers for LabVIEW® and Tango, in order to reuse inside !CHAOS, control code and GUI written for LabVIEW® or Tango. These compatibility layers can be used in the task 3.2 to include a huge quantity of legacy code written for particle accelerator components. On the other hand the national instruments developer will study the integration of ! CHAOS in the LabVIEW® framework.

Task 4.1 - ESCO HRP implementation (Task leader Mauro Piccini)

This task is dedicated to the ESCO use case. The following steps will be carried out:

- Collecting the ESCO requirements;
- Defining and testing the HRP (eg. Systems On Chip and/or task 4.4 solution);
- Implementing the sensors interconnection and topological structure for both wired and wireless solutions;
- Developing the first revision of reference platform the assessment;
- Test, release and qualification.

Task 4.2 – FP HRP implementation (Task leader Salvatore Puvirenti)

This task is dedicated to the study of prototypes, and testing on the accelerators of LNF and LNS. The task will face issues such us: time critical applications, high throughput performance, System of Systems control, safety, fault handling, etc, etc. To realize it will be carried out the following steps:

- Collecting the FP requirements for the critical parts of future accelerators;
- Defining and testing a high performance HRP;
- Defining and testing the HRP and devices interconnection topological structure
- Developing the prototype of the critical hardware (eg. Low Level RF, performing BPMs, fast LINAC control I/O, etc.)
- Test on running LNF &LNS accelerators.

Task 4.3 - Identification of the operating standards for wired and wireless network connections (Task leader Bruno Checcucci)

This task is dedicated to find out solutions for the interconnections. This is important mainly for the ESCO case where the constrains of the building to be monitored claim for special attention:

- Defining the implementation of wired transmission technologies (eg. Ethernet and/or Power Line Communication) and wireless (eg. IEEE 802.11 and/or IEEE802.15.4 and/or 802.16)
- Test, release and qualification.

Task 4.4 - General purpose HRP (Task leader Gaetano Salina)

This task is focused on the development of a general purpose HRP (G-HRP) that can be used to:

- implement a standalone local !CHAOS instance, providing services to the connected devices;

- integrate third-party technologies into the !CHAOS environment.

This G-HRP is intended both as a hub for creating hierarchical structures in complex installations and for creating sub-systems interfacing sensor networks based on third-party technologies.

The G-HRP will be able to provide locally all the !CHAOS services, still having the possibility to be fully integrated in the "main" !CHAOS infrastructure.

The work to be done will be the development of the G-HRP device, realized through the following steps:

- Analysis of the main hardware/software custom existing devices;
- Development of the gateway core, hosting !CHAOS features;
- Definition of a hardware/software plug-in board to adapt the gateway I/O to third-party technologies

Task 5.1 - Identify applications and user requirements, implement the IaaS infrastructure (Task leader Paolo Veronesi)

The task has in charge to identify the applications, user requirements and procedures provided by different WPs in order to define the basic infrastructure services that match the project needs. The main services will be implemented by a Cloud testbed modeled as IaaS providing the following base services:

- Identity Service: provides a central directory of users mapped to the infrastructure services
- Image Service: provides discovery, registration and delivery services for disk and server multi-format images.
- Compute Service: provides on-demand computing resources;
- Networking Service: provides flexible networking models to suit the needs of different applications or user groups;
- Storage Services: provides redundant, scalable Object and Block storage capabilities;
- Web Portal: provides administrators and users a graphical interface to access, provision and automate cloud-based resources.

Task 5.2 - Extension of the infrastructure providing PaaS capabilities and Grid core services (Task leader Marco Caberletti under 35)

In this task we will extend the functionality of the IaaS infrastructure in such a way that it can provide services like PaaS (Platform as a Service) to develop, test, deploy and manage applications in an integrated development environment. Moreover the activity will identify applications and HTC (High Throughput Computing) computational tasks suitable for the Grid infrastructure provided by IGI (Italian Grid Infrastructure) and EGI (European Grid Infrastructure) of which the INFN is one of the major suppliers and users. The following steps are envisage:

- adapt applications to run in this environment ("Grid application porting");
- deploy (in the IaaS) and manage the Grid core services necessary for the execution and monitoring, in order to exploit Grid resources in an opportunistic way.

Task 5.3 - Web portal and Access Policies (Task leader Giovanni Zizzi under 35)

The aim of this task is to implement a web portal as a single point of access to manage that infrastructure and take advantage of all the services. The tools and access policies will be agreed in collaboration with WP2 to define a single-sign-on authentication and different levels of authorization in a transparent way. Last but not least the task will define the authentication mechanisms that will be used in controlling the access to the !CHAOS resources:

- supporting authentication federation such as IDEM;
- allowing single sign-on and adaptation of the level of security to different resources;
- defining the authorization model used for access control to !CHAOS resources.

Progetto Esecutivo

effort	Deliverable name	Delivery date
FT*X (mese) chi?	Storico	Month XX
FT*X (mese) chi?	User interface	Month XX
FT*X (mese) chi?	configurazione	Month XX
FT*X (mese) chi?	algoritmi	Month XX
FT*X (mese) chi?	sistema di health	Month XX
FT*X (mese) chi?	CU remota	Month XX
D2.1	D2 !CHAOS as a service	Last Month
FT*14 (mese) Mirco/Luca	Use case BTF	Last Month
FT*X (mese) Luca?	Use case acceleratore LINAC	Last Month
FT*12 (mese) Simone	Use case ESCO	Last Month
D3.1	Realization of a control system dedicated to ESCO use case	Last Month
D3.2	Prototype of critical elements of FP control system	Last Month
D 4.1	ESCO HRP	Last Month
D 4.2	FP HRP	Last Month
D 4.3	Prototypes hub and gateway G-HRP	Last Month
D 5.1	Implementation of a cloud based infrastructure	Last Month
D1.1	Final management report, edited in accordance with the reporting guidelines	End of project + 90 days

WBS WP1

STORICO	sistema dove archiviare dati per ogni devices/classi/gruppi con la funzionalità di query tale da restituire dati in un determinato intervallo di tempo
UI	API per recuperare i dati realtime o storicizzati o per ogni device in un determinato intervallo di tempo script di comandi
CONFIGURAZIONE	configurazione del dataset di ogni device per l'inizializzazione e la de-inizializzazione salvataggio e restore dei dati di ogni device raggruppamento dei dei devices in classi raggruppamento delle classi/devices in gruppi configurazione dei gruppi di classi/devices
ALGORITMI	EU (seconda priorità)
HEALTH DEL SISTEMA	CU alive, service alive, LAN alive
CU REMOTA	possibilita' di collegamento di una cu su WAN

WBS WP2

BTF Foggetta-Andreotti	- messa in funzione di un miror del DAQ BTF - formattazione dati BTF in !CHAOS Format DAQ-Labview - push dati dal DAQ-Labview a MemCached - adattamento UI al !CHAOS format - porting BTF-DAQ Labview in CU - sviluppo di strumenti di analisi in ROOT
LINAC	nop
ESCO	- definizione della lista degli strumenti HW da acquisire per il sistema prototipo (monitoraggio) e per sistema cliente (monitoraggio e attuazione) - definizione e configurazione chip on board (wireless LAN) - configurazione e test del sistema distribuito di chip on board (boot, etc) - implementazione dei driver per l'acquisizione dell'HW definito - sviluppo del sistema prototipo - implementazione dei driver per l'acquisizione dell'HW definito - sviluppo del sistema cliente

Esempio

LUCA

MIRCO

	Month					
BTF	1-2	3-4	5-6	7-8	9-10	10-12
messa in funzione di un miror del DAQ BTF						
formattazione dati BTF in !CHAOS Format DAQ-Labview						
push dati dal DAQ-Labview a MemCached						
adattamento UI al !CHAOS format						
porting BTF-DAQ Labview in CU						
sviluppo di strumenti di analisi in ROOT						

5 mesi

12 mesi