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Industry day panel | July 14th, 2015

- TECNOBIT S.L.U. was established in 1976 and operates under this denomination since 1981, supplying electronic and communication products and integrated systems for defense and security.

- Headquarters are located in Madrid, but engineering and production resources are mainly based in Valdepeñas (Castilla - La Mancha). Since 2011, the company also has a fully owned subsidiary in Brazil, headquartered in Río de Janeiro.

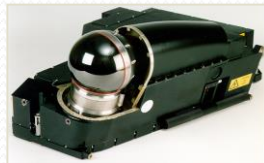- Tecnobit employs 450 people. Around 90 of them are Software Engineers.

- Defense Electronics Company

- Activities

  - Avionic Systems

  - Optronics

  - Command and Control

  - Simulation
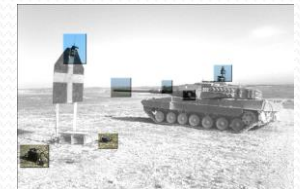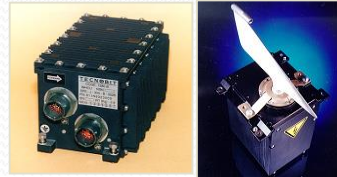
Business lines

AVIONICS

COMMAND & CONTROL

OPTRONICS

SIMULATION & SUPPORT

- DESIGN & DEVELOPMENT
- MANUFACTURING
- INTEGRATION & TEST
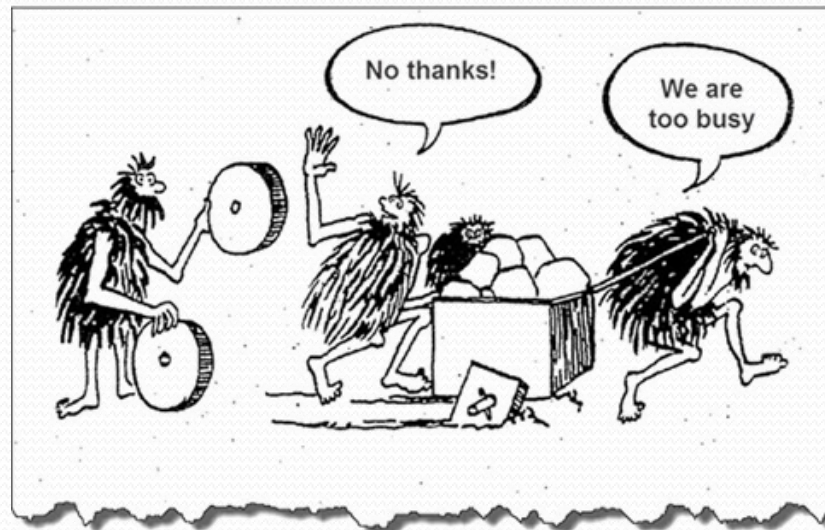- CUALIFICATION & CERTIFICATION
- OPERATION & LOGISTIC SUPPORT

Tecnobit Historical situation of Software Development

- Lack of processes
- Different technologies
- Tools dispersion
- Every Software project leader was reinventing the wheel

But, everything changes and

When I arrive to my actual position in 2008, I decided to lead the change

Software situation evolved ...

- Only one stablished framework for all developments (Madrid, Valdepeñas and Brazil in the future)
  - Based on Open Source tools but strongly connected to proprietary tools (Bidirectional links)
  - Collaborative framework
    - Dashboards
    - Wikis
    - Forums
    - Shared version control system
    - Focused in risk management
    - Project information accessible for every member
    - All services based on internet technologies
    - English as a base of developments
    - Continuous integration
   - Continuous inspection ...

Software situation evolved ...

- Every process is documented
  - Well defined software activities
    - Based on Requirements
    - Design
      - Based in Kruchten model
      - Focused on Design patterns
    - Coding. There is a Software coding standard
    - Test. Automated if project budget allows it, if not well documented
    - Configuration Control. As a company service
    - Software quality. Established by Quality department
    - ...
  - This facilitates movement of engineers between projects
  - As a result, risks decreases in External certifications and audits
  - Annually every project is audited against processes

Software situation evolved …
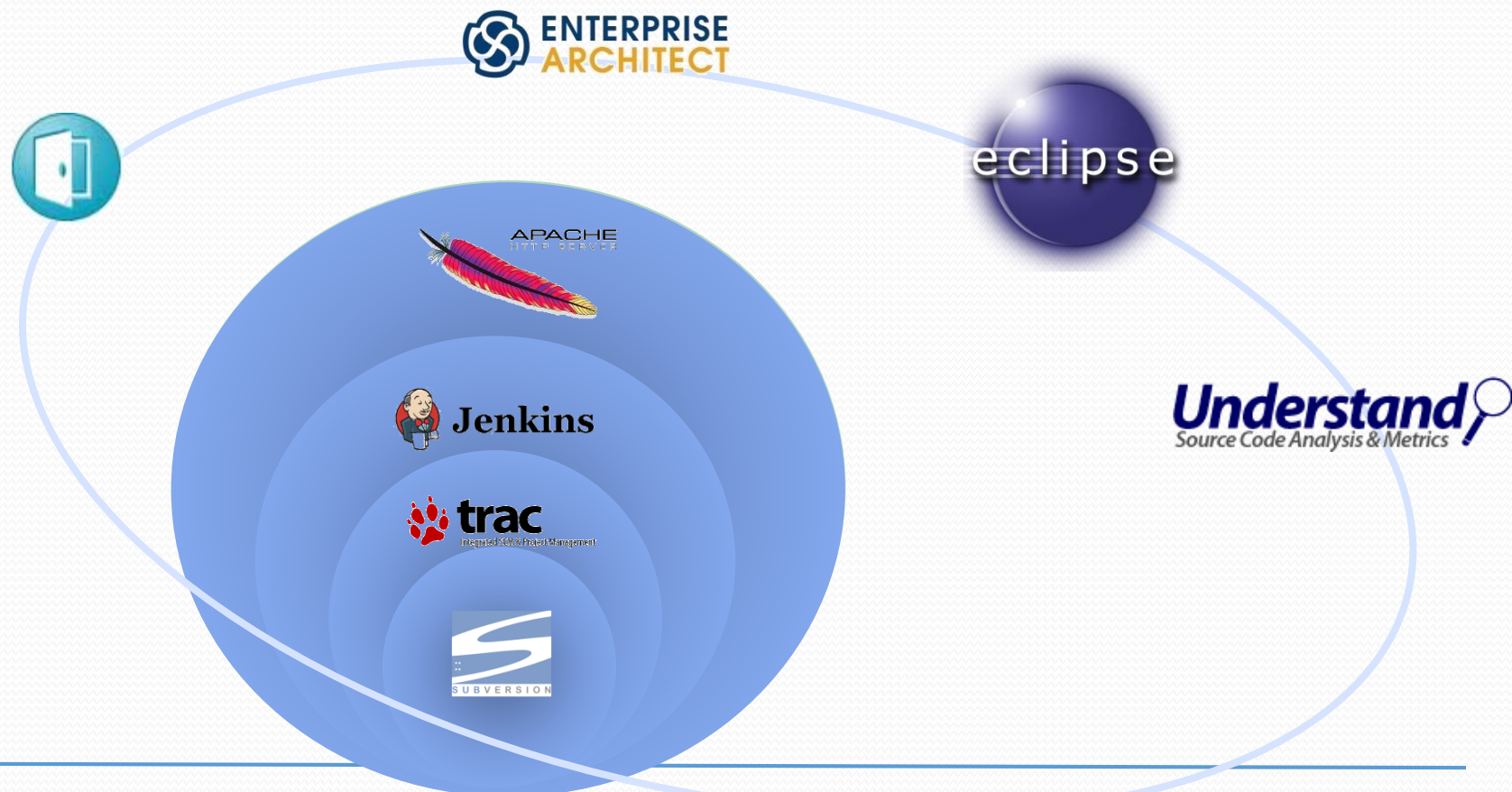
Software situation evolved ...

- In 2008, when I started the definition of the framework and processes, I was only focused on the resolution of the internal problems that I had found

- What a surprise!. When the first GSD project appears we took notice that we were ready for the challenge

Example #1. SAFO (Brazil)

- Development of two Simulation Fire Support Centers for the Brazilian Army

- Transfer of Technology as a contract requirement

- Project has to be developed with SW engineers of the two countries: Brazil and Spain

Example #1. SAFO (Brazil)

- Project started in 2009 in Madrid, were mainly developed in Madrid with around 15 Spanish engineers and 10 Brazilian engineers. Project has been deployed in 2014. Nowadays the project is almost finished and in maintenance. In this moment there are software engineers in Brazil and Madrid evolving the system.

Example #2. Zaly (Saudi Arabia)

- Development of optronic system able to work in two modes, vehicle and Surveillance

- Transfer of Technology as a contract requirement

- Project has to be developed with engineers of Saudi Arabia and Spain

Example #2. Zaly (Saudi Arabia)

- Project started in 2012 in Valdepeñas, were developed in Valdepeñas with around 10 Software Spanish engineers and 6 Saudi Arabia engineers and Deployed in 2015. Nowadays the project is almost finished there are people working on it in the two countries.

- In this moment, we are developing with our customer three more projects related with this because of the customer satisfaction.

Example #3. Cryptoper (Afghanistan)

- Personal encryption system for mobile voice and data communications (PDA/GSM) compliant to NATO SCIP (Secure Communication Interoperability Protocol).

- Deployed to equip ISAF for secure satellite communications over Iridium links.

- Field engineers have to work in deployment area to assure real time support

Example #3. Cryptoper (Afghanistan)

- In this moment there are Software engineers working in Valdepeñas and in Afghanistan and sharing Project data in real time.

Pros

- Stable and proven framework
- Flexible enough to allow different products, lifecycles, technologies, operating systems, quality standards, etc. Allows us to work fine on development centers and in deployment field (when communications allow it)
- Access to information is restricted
- Allows encryption of communication between clients and servers

Cons

- All projects starts in one country, after some adaptation time the project can evolution separately
- It is needed a good internet support
- The framework is too rigid for some Software engineers

Thanks for the attention

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