



estrategia

RIS3

Extremadura

Extremadura's
Research
and Innovation
Strategy for
Smart Specialisation
2014-2020

TRAZABILITY AND BIG DATA



Needs in digitalization related to agri-food (Traceability and Big data)

- ✓ Develop tools through the use of TICs to improve access to quality control and information of products in stakeholder agro-food.
- ✓ To minimize the time in decision making and in the analytical processes of control and identification.
- ✓ Implement the possibility of diversification of the agri-food sector and increase its competitiveness

Opportunities identified in the area of digitalization related to agri-food (Traceability and Big Data)

- ✓ Agri-food, is a sector in trend, with great possibilities of innovation based on resources and local capacities
- ✓ Innovative potential of traditional sectors, mainly agri-food.
- ✓ International cooperation for development as a source of innovation.

Capacities in the area of digitalization related to agri-food (Traceability and Big data)

<u>STAKEHOLDER</u>	<u>TICs</u>	<u>Capacities</u>
Farmer	- NIRS	<ul style="list-style-type: none">• Nutritive control of feed animal in free-range system• Quality control natural resources
Industrial	- NIRS	<ul style="list-style-type: none">• Quality Control in production line• Classification of products in production line
Commercialization	- NIRS	<ul style="list-style-type: none">• Nutritive evolution during storage of products• Quality control in commercialization and distribution• Classification of products in commercial categories
Consumers	<ul style="list-style-type: none">- NIRS- QR Codex	<ul style="list-style-type: none">• Quality control of nutritive composition• Classification of products• Trazability, information promotion

Previous experience in NIRS and TRAZABILITY (I)

Meat Sector

Quality control and classification

- Acorn and grass for Iberian pigs
- Carcass
- Meat fresh
- Dried-cured products
- Manufacturated products.

Unión Europea
Fondo Europeo de Desarrollo Regional
"Una manera de hacer Europa"



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Consejería de Economía e Infraestructuras



... *Farm-to-Fork* ...

Agroforestry Sector

Quality control and classification

- Triticale.
- Cork



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Previous experience in NIRS and TRAZABILITY (II)

Fruit Sector

Quality control and classification



- Cherry.
- Nectarine
- Figs

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Oil Sector

Quality control and classification



- Oil.
- Olives
- Olive's paste



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Previous experience in QR Codex and TRAZABILITY (III)

- **Task 2.2.2_ Implementation of non-destructive techniques for establishing maturity and quality ratios, and the implementation of ICT in fruit of regional interest**

OBJETIVES:

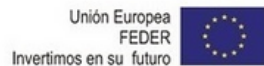
1. Design and optimize protocols for establishing harvest indices through the use of optical sensors.
2. Implementation of non destructive instrumental techniques to establish the postharvest quality of stone fruit.
3. Viability of the use of intelligent packaging in the determination of fresh and minimally processed fruit quality.



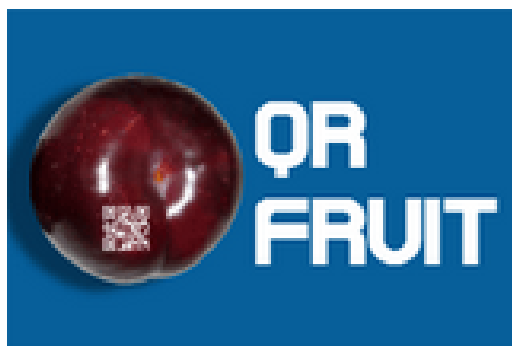
Previous experience in QR Codex and TRAZABILITY (IV)



The screenshot shows a web browser at the URL qrfruit.gobex.es/es/. The page header includes the MITTIC logo, the Junta de Extremadura logo, and the CICYTEX logo (Centro de Investigaciones Científicas y Tecnológicas de Extremadura). The main content area is titled "QRfruit - MITTIC" and features a sub-header "Aplicación de códigos QR en frutas". The text describes QRfruit as an application for generating QR codes with fruit information and consumer satisfaction data. It includes links for "Accede a tu cuenta", "Crea una cuenta de usuario para entrar", and "Manual de Usuario de QRFRUIT". A section titled "Modernización e Innovación tecnológica con base TIC" explains the project's funding by the FEDER and its goal of promoting economic growth and employment in Extremadura and Alentejo.



Previous experience in QR Codex and TRAZABILITY (V)



qrfruit.gobex.es/es/

19/03/2015

Funcionalidad 2. (Consumidor).

<http://fichasfrutas.mitic.es/es/pdfs/cereza1.pdf>

FICHA DE CEREZA en PDF

6

19/03/2015

Funcionamiento real de aplicación.

Ciruela

Varietal	Larry Ann
Color de la Piel	Negra
Color de la Pulpa	Amarilla
Origen	Badajoz
Origen SIGPAC	http://sigpac.gobex.es/VisorSigPac/ <ul style="list-style-type: none"> País: España Región: Extremadura Provincia: Badajoz Municipio: Badajoz Polígono: 759 Parcela: 21 Recinto: 1
F. Recolección	08/09/2014

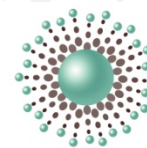
14

LUSITANIA SUPERCOMPUTER



2 HP integrity Superdomes sx2000

- 2 x (64 procesadores/128 cores):
- Total 128 procesadores/256 cores
- 2 x 0,8192 = 1,63 Teraflops pico.
- Itanium®2 Dual Core Montvale @ 1.6 GHz, 18 MB cache
- 768 GB de memoria principal
- 2x 1TB memoria en una imagen:
- Total 2 TB memoria.
- 2x 40 x 146 GB SAS Disks = 11,68 TB de scratch
- SuSe Linux SLES 10
- Particiones:
- Hasta 16 particiones físicas
- Hasta 64 particiones virtuales PRM, WLM, IVM en HP-UX,gWLM multiSO

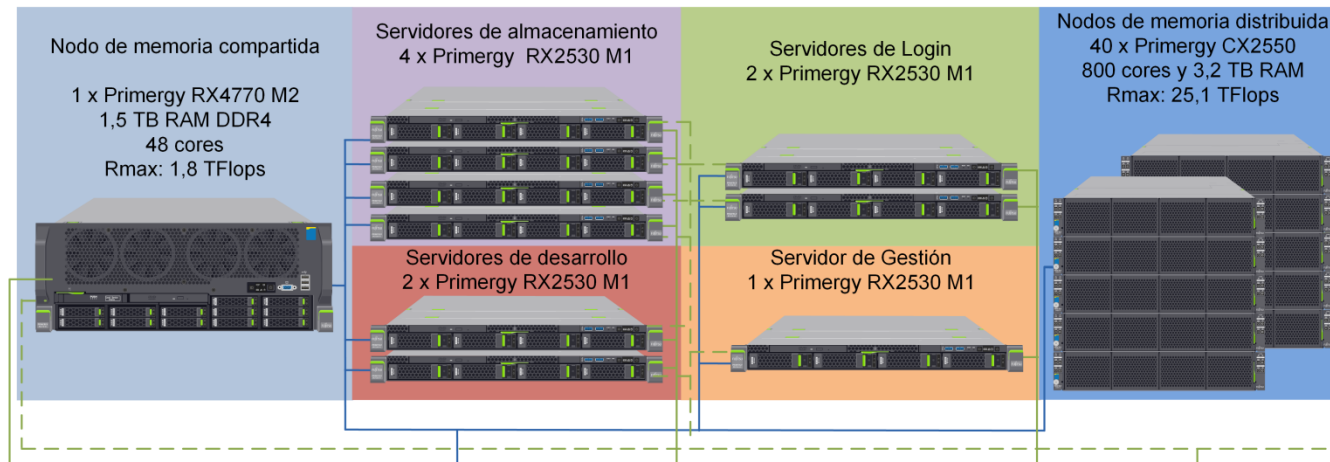


COMPUTAEX

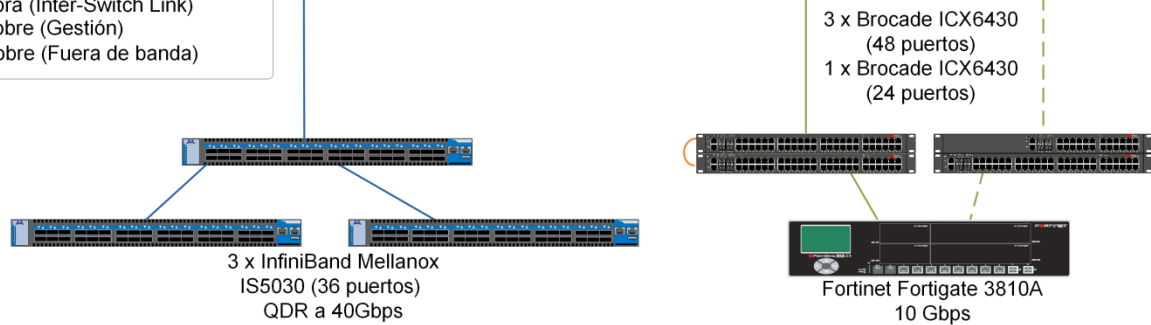


LUSITANIA SUPERCOMPUTER II

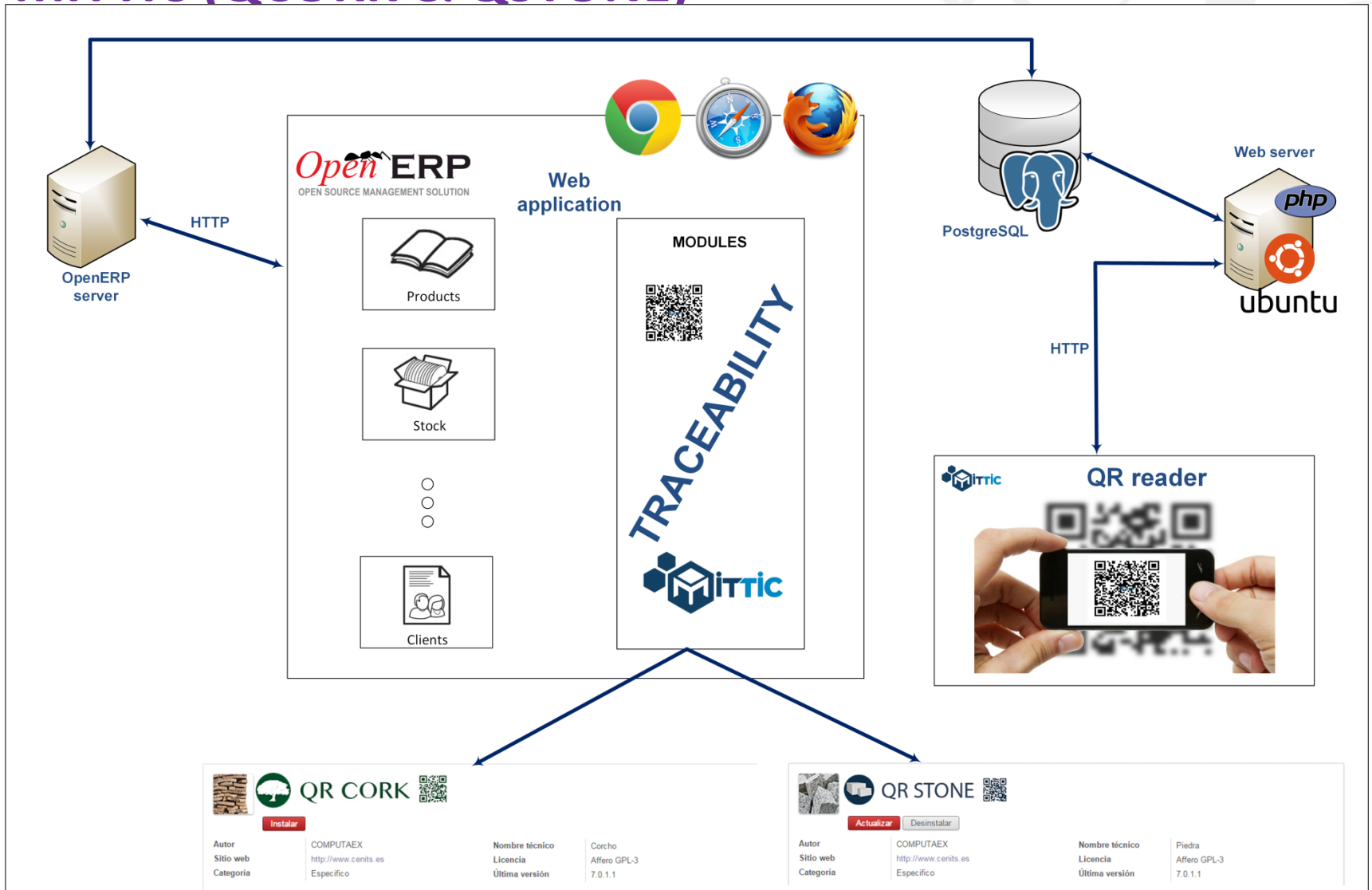
Arquitectura LUSITANIA II



- 40 Gbps Infiniband (Almacenamiento y cómputo)
- 1 Gbps Ethernet. Fibra (Inter-Switch Link)
- 1 Gbps Ethernet. Cobre (Gestión)
- - - 1 Gbps Ethernet. Cobre (Fuera de banda)



MITTIC (QCORK & QSTONE)



ConSumar



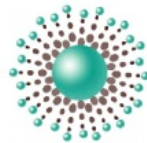
Architecture ConSumar Big Data project

Regional partnership structure (if any) and steps toward its consolidation

JUNTA DE EXTREMADURA



CENTRO DE INVESTIGACIONES
CIENTÍFICAS Y TECNOLÓGICAS
DE EXTREMADURA



COMPUTAEX



FUNDECYTPCTEX



Main Regional Operational Programmes related to TICs & agri-food sector- P.O. FEDER 2014-2020 / RIS3 EXTREMADURA

THEMATIC OBJECTIVES (TO) / Priority Axes

OT1. Strengthening research, technological development and innovation

INVESTMENT PRIORITIES

1b: Promoting business investment in R&I, developing links and synergies between enterprises, research and development centres and the higher education sector, in particular promoting investment in product and service development....

SPECIFIC OBJECTIVES

OE.1.2.1 Developing and promoting R & I activities led by enterprises, support for the creation and consolidation of innovative companies and support for Public Procurement of Innovative solutions PPI

OE.1.2.3 Promoting and developing of frontier knowledge and knowledge oriented to the challenges of society and development of emerging technologies

A CTIVITIES

- Actions to generate knowledge in agri-food and forest resources oriented to the challenges of society
- Promotion of research in ICT and supercomputing
- SME Innovation Plan
- Actions to promote research projects in individual or collaborative enterprises
- Start up Extremadura program and actions to support the creation of EBT
- Innovation Projects in enterprises and SMEs

- Extremadura System of Science Technology and Innovation (SECTI) research and innovation projects
- Actions to promote innovative technologies in the integral water cycle

European projects related to the TICs and the agri-food sector in which the region is involved.



MITTIC. Technological Modernisation and Innovation based on ICT in strategic and traditional sectors

MITTIC promotes economic growth and employment by increasing competitiveness in economic, strategic and traditional sectors in the regions of Extremadura (Spain), Centro and Alentejo (Portugal) by using Information and Communication Technologies (ICT).

We try to provide user-friendly solutions that can be used by farmers and companies to optimize production processes, to improve the marketing of their products or to increase the information given to consumers about their products origin and quality.

12 Partners (7 from Spain and 5 from Portugal)

Budget: 1.521.964,84 €



European projects related to the TICs and the agri-food sector in which the region is involved.



MITTIC. Technological Modernisation and Innovation based on ICT in strategic and traditional sectors

10 joint technological development actions on topics as :

- Use of NIR technology (near infrared radiation) in the agrifood and pastureland products (acorns, cork, oil, fruits...)
- Precision animal feeding
- Active and intelligent packaging

6 Open source software ICT tools in traceability and technological forecasting

Training, dissemination and demonstrative activities

- 2 Virtual Training Platforms (pastureland and minimally invasive surgery)
- 21 training and demonstrative activities