

# EL INSTRUMENTO PYME DE H2020

CASOS DE ÉXITO DE PYMES  
EXPERIENCIA Y BUENAS PRÁCTICAS

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## ULISENS

Ultra *Legionella* Inmunoanalysis System for Early  
Sensing

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Guillermo Rodríguez  
Jueves 09 de Marzo - 2017

*"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 726499".*

# La misión de Biótica

biótica®  
FAST DETECTION FOR LIFE

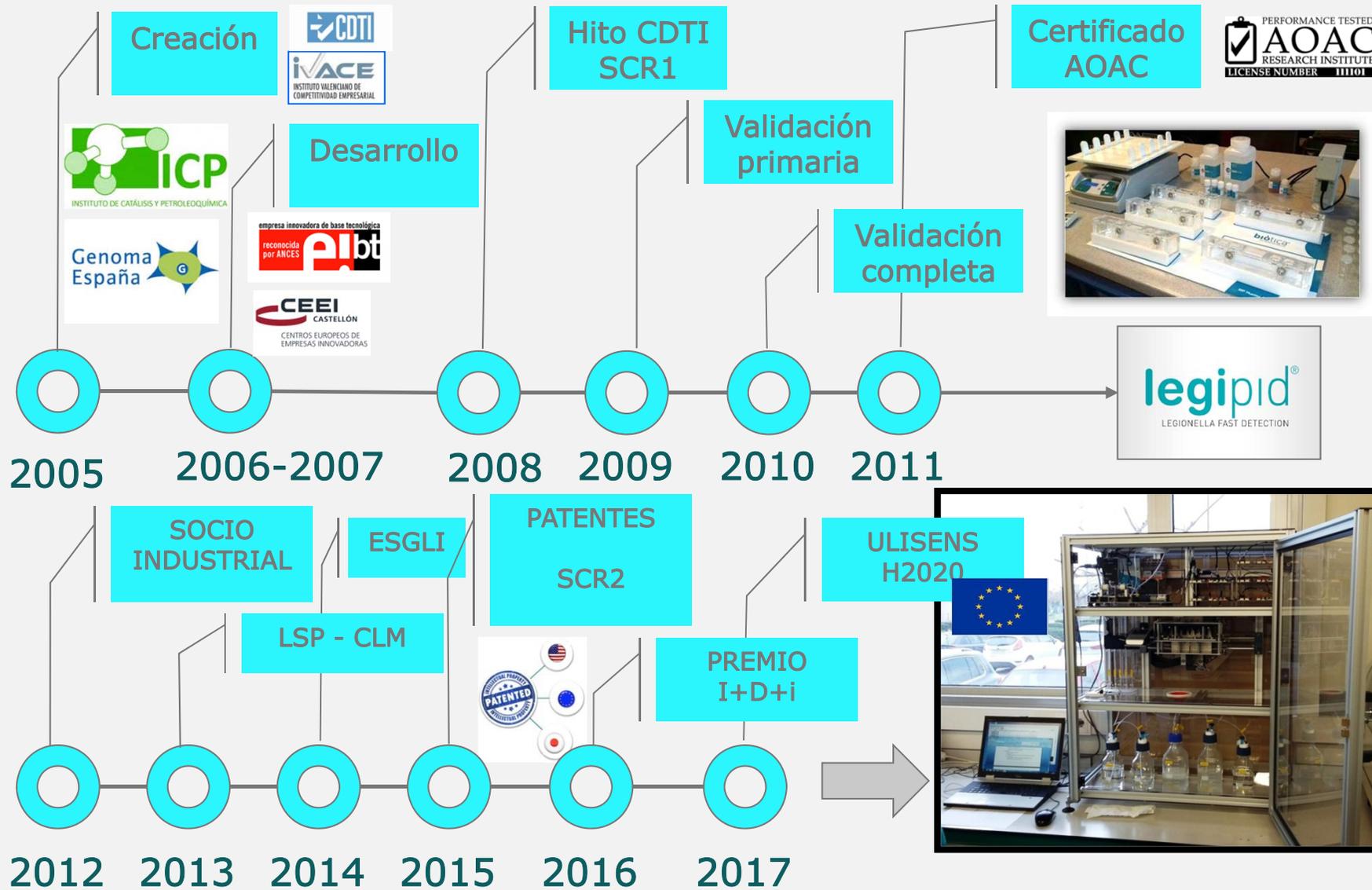
- ◆ **Compromiso:** Nace en Vila-real en 2005 con el compromiso de una microbiología socialmente responsable.
- ◆ **Actividad:** Se centra en la investigación, desarrollo y comercialización de sistemas de detección temprana de microorganismos patógenos.
- ◆ **Objetivos:** Proveer al cliente de reactivos y procedimientos simples y rápidos de detección y cuantificación de microorganismos patógenos como primer paso para evitar sus efectos sobre la sanidad humana y ambiental.

- Miembro fundador de Bioval (Asociación de Empresas de Biotecnología de la Comunidad Valenciana).
- Asociado de AquaEspaña (Asociación Española de Empresas de Tratamiento y Control de Aguas).
- Miembro del comité de la norma UNE1000:30 para la Prevención y control de la *Legionella*.
- Organizador del I Congreso Internacional de Métodos Rápidos de *Legionella* en la Universidad Jaume I, celebrado el 26 de Noviembre de 2015.
- Miembro del Grupo de Trabajo "Salud, calidad de vida, innovación sanitaria y biomedicina" para el Consell Valencià de la Innovació (CVI).



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# La historia de Biótica



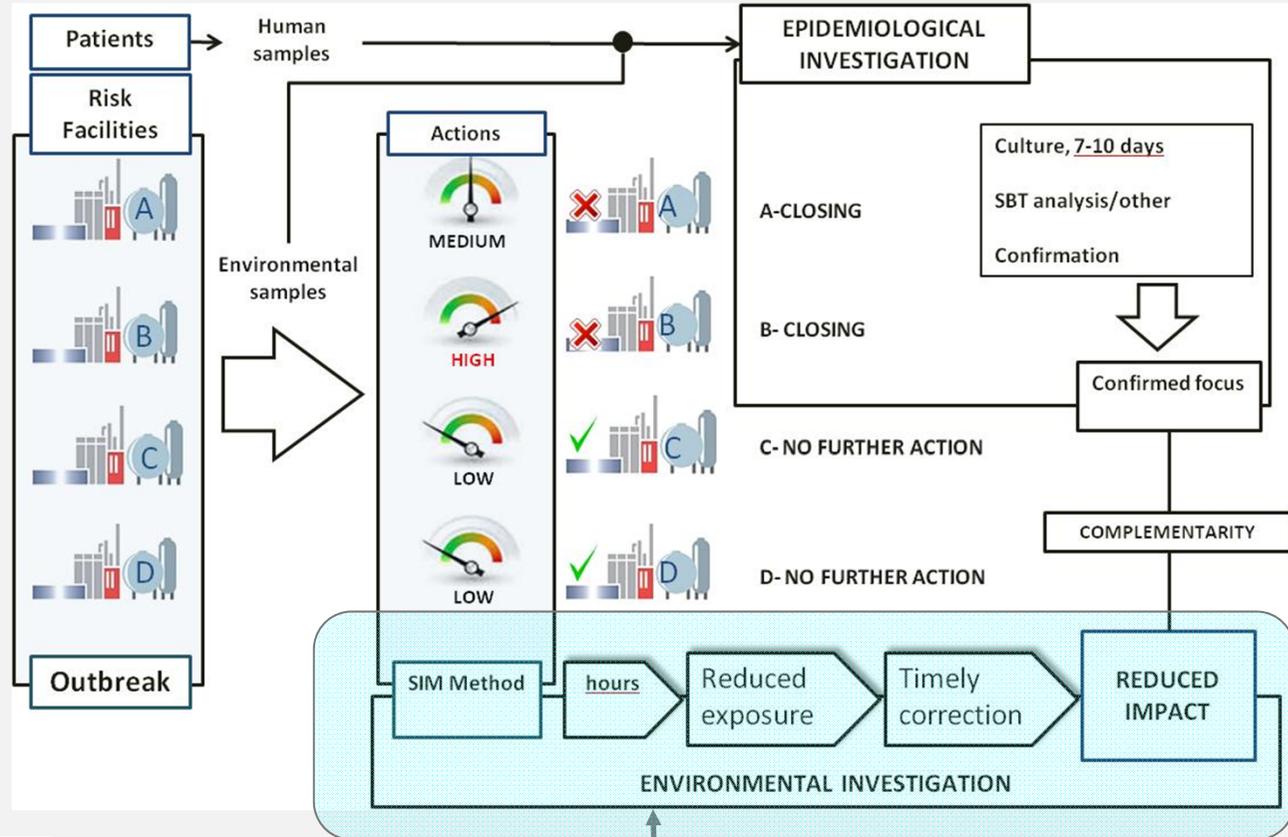
# Legionella es el reto

## OUTBREAKS

2015 <b>Espanya</b> Manzanares Causa per determinar	237 <b>4</b>
2014 <b>Espanya</b> Sabadell/Ripollet Barrendera	48 <b>10</b>
2012 <b>Espanya</b> Móstoles Causa per determinar	63 <b>2</b>
2010 <b>Espanya</b> Madrid Causa per determinar	47 <b>6</b>
2001 <b>Espanya</b> Murcia Causa Torres de refredament Hospital	449 <b>6</b>
2015 <b>USA</b> Nova York Causa per determinar	132 <b>12</b>
2014 <b>Portugal</b> Vila Franca de Xira Causa Torre de refredament	370 <b>13</b>
2013 <b>Alemanya</b> Warstein Causa Torres de refredament Fàbrica de Cervesa	166 <b>2</b>
2002 <b>Japó</b> Miyazaki Causa Balneari Públic	292 <b>7</b>
2002 <b>Regne Unit</b> Barrow Causa Aire acondicionat	494 <b>7</b>

 **Afectados**

 **Muertos**



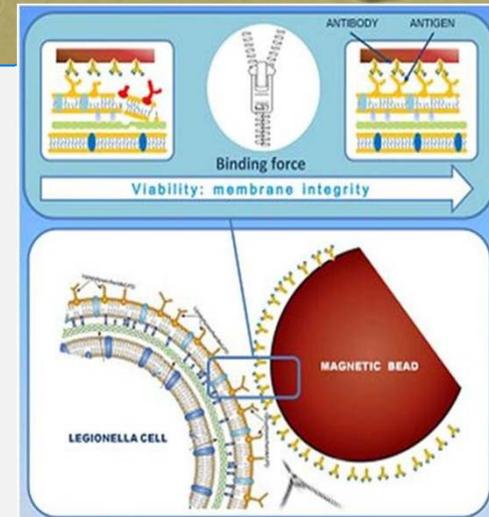
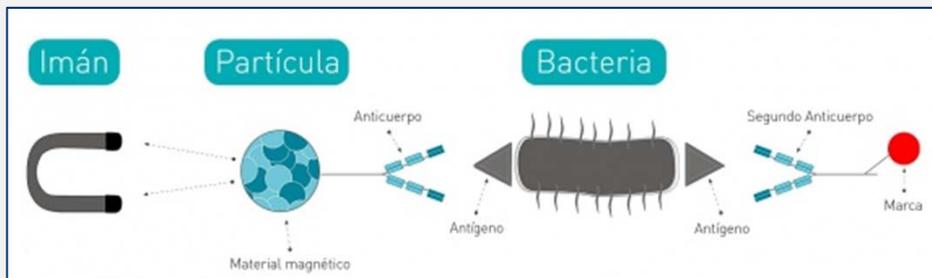
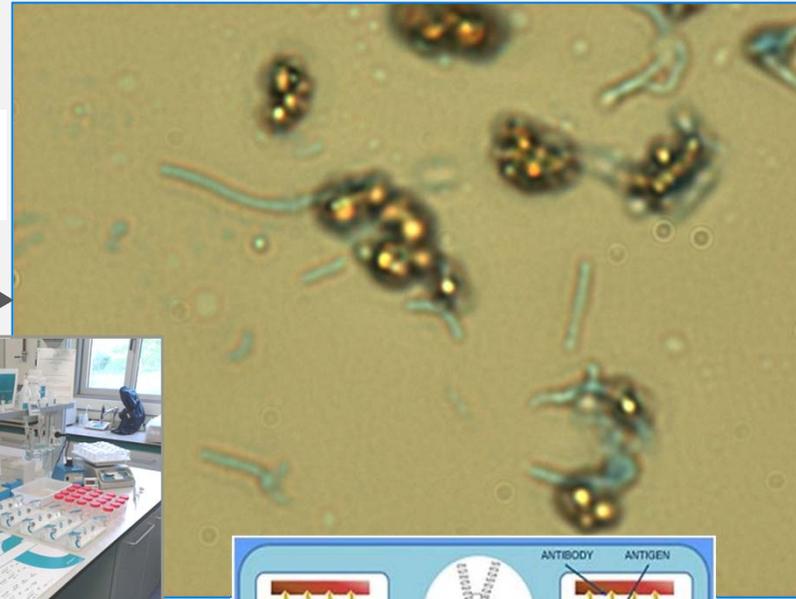
Con las técnicas actuales no es posible!!!

# La solución de Biótica

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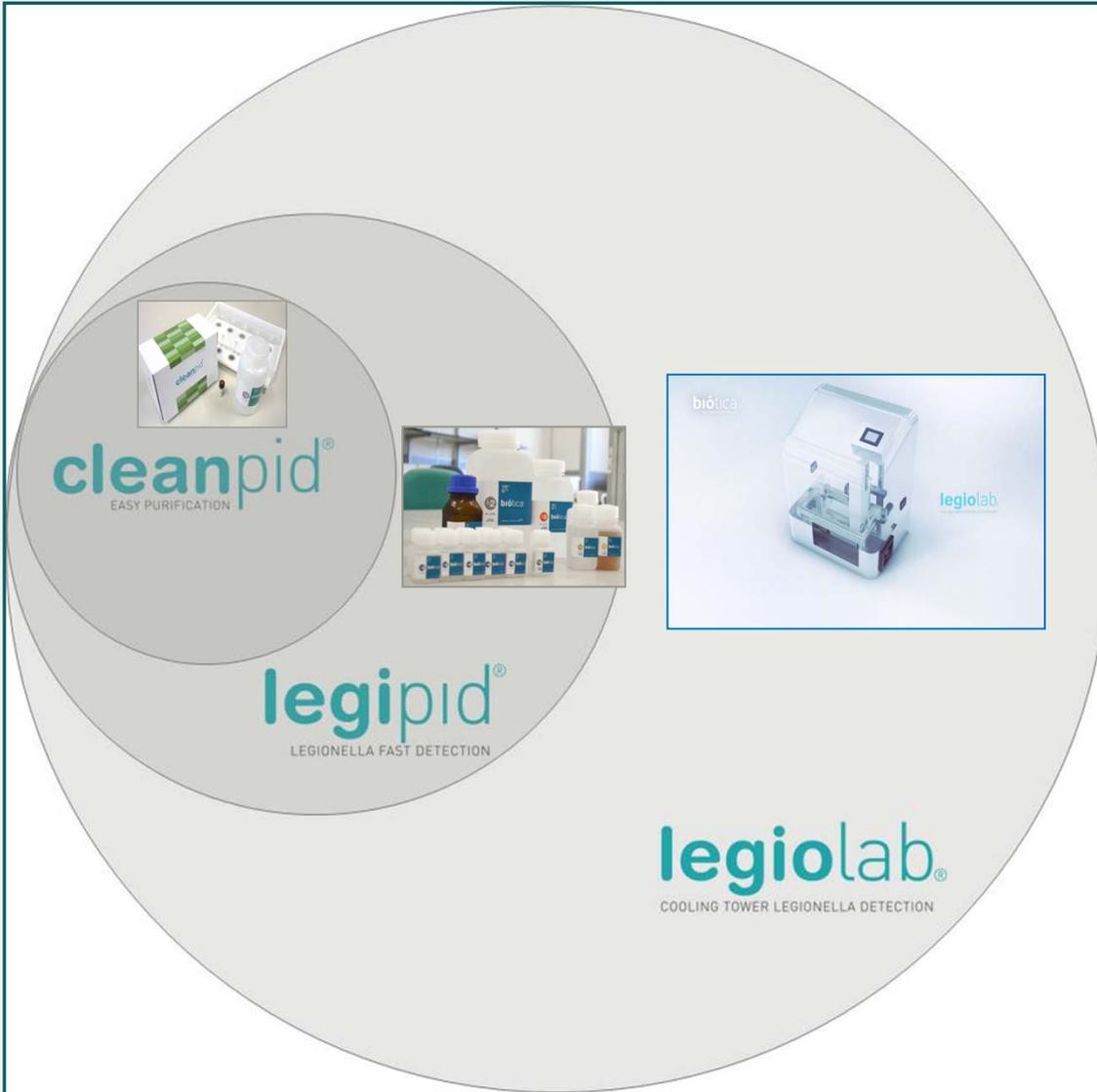


Partículas magnéticas



# Biótica: Plan de Negocio

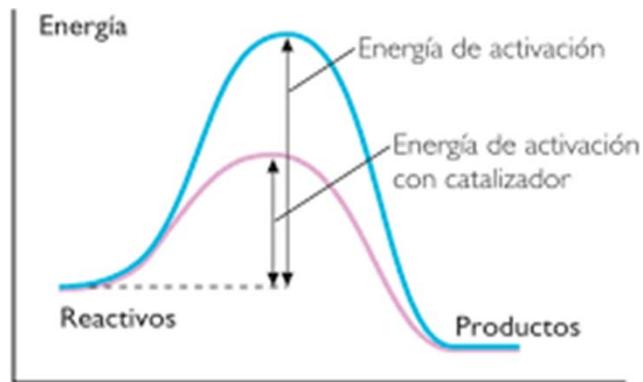
**biótica**  
FAST DETECTION FOR LIFE



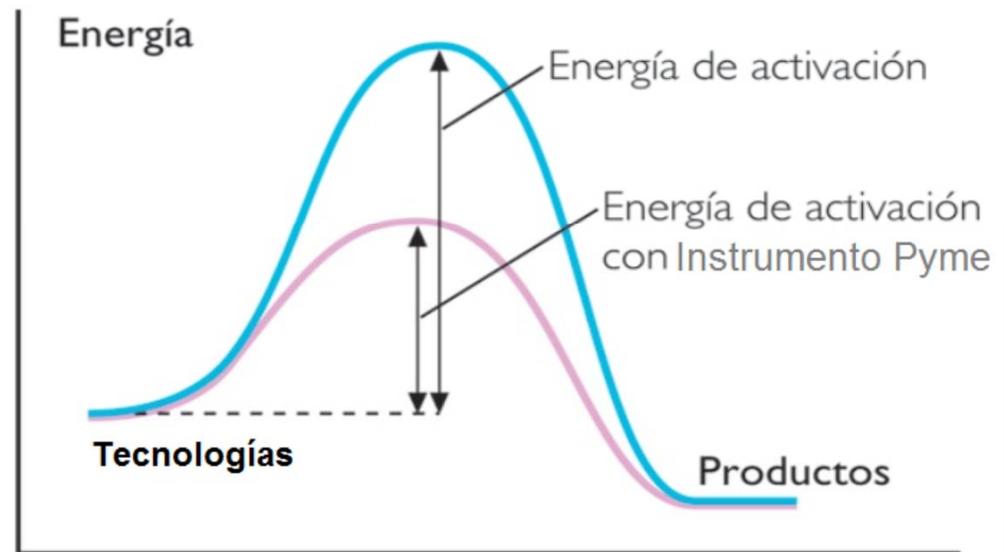
# El Plan de Negocio y el Instrumento PYME

El Instrumento Pyme no es el negocio.....es el instrumento para desarrollarlo

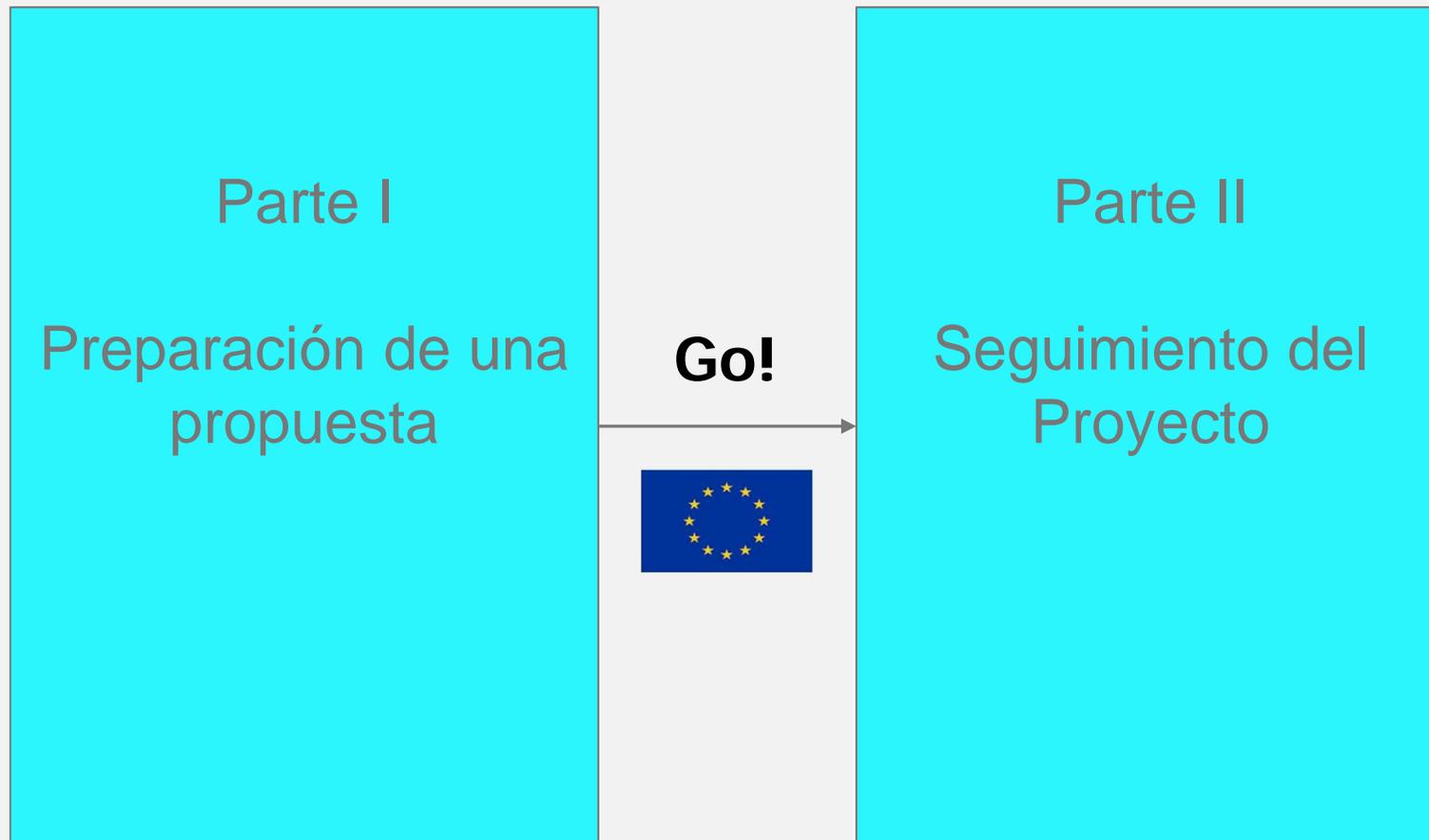
## ENERGÍA DE ACTIVACIÓN EN LAS REACCIONES QUÍMICAS



## ENERGÍA DE ACTIVACIÓN DE NUESTRO PLAN DE NEGOCIO



Cataliza el desarrollo de nuestro Plan de Negocio



## Parte I

### Preparación de una propuesta

# La idea debe ser clara



# Enfoque Instrumento Pyme

## Planteamiento de la Propuesta

Un negocio basado en un equipo automático que mide *Legionella* con un método rápido

- Ingeniería solvente para el desarrollo de la máquina
- Ingeniería implicada en el negocio (fabricación)
- Usuarios prescriptores (Demostraciones) (Europa, USA, Japón)
- Empresa tractora implicada en la venta

¿Qué quieres hacer?

¿Cómo lo vas a hacer?

¿Qué vas a necesitar?

¿Cómo vas a vender?

- Test rápido y certificado (AOAC)
- Tecnología patentada (Europa, USA, Japón)
- Versiones/nichos: campo y laboratorio
- Conectividad (Redes)

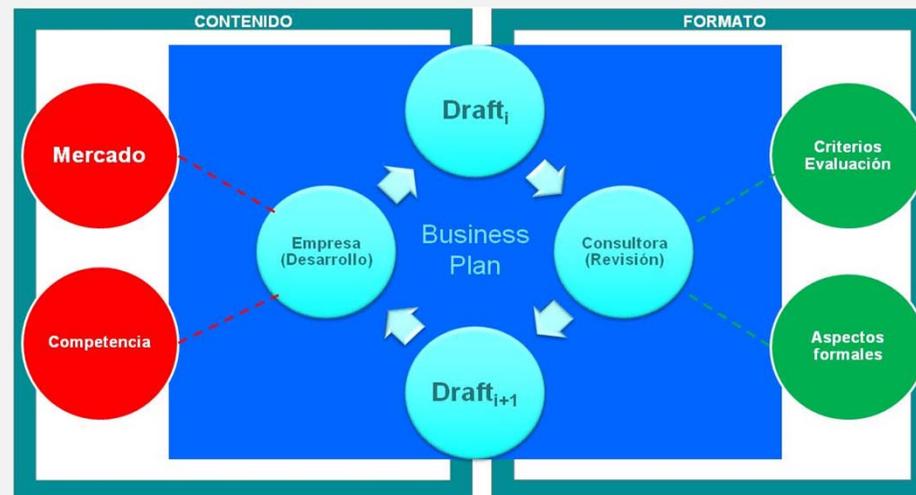
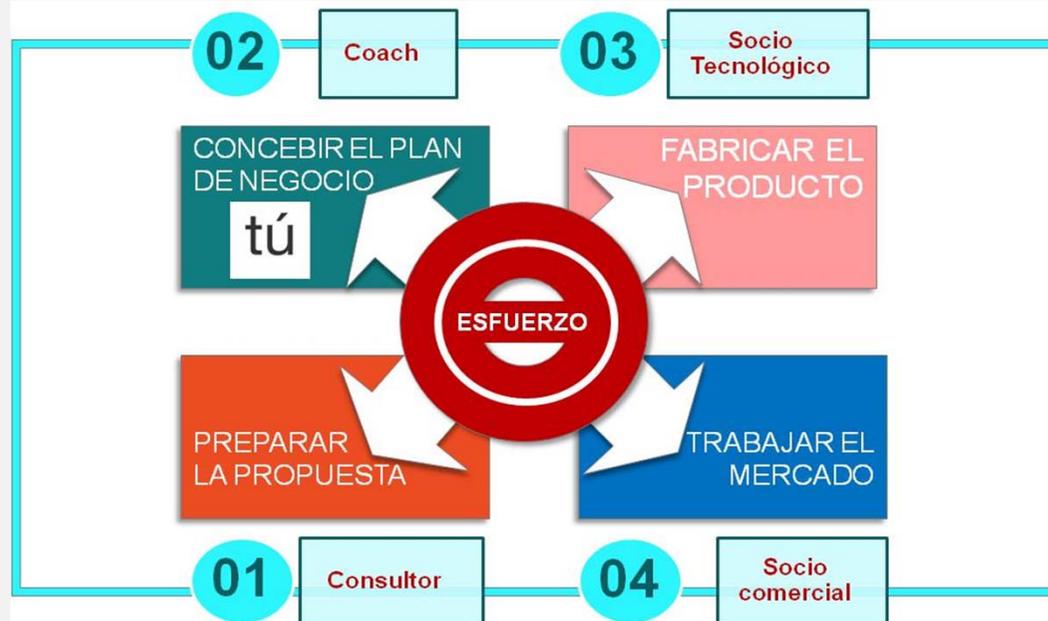
- Producción en unidades replicativas
- Distribuidores

# Colaboración e Instrumento Pyme

La importancia de los “socios”

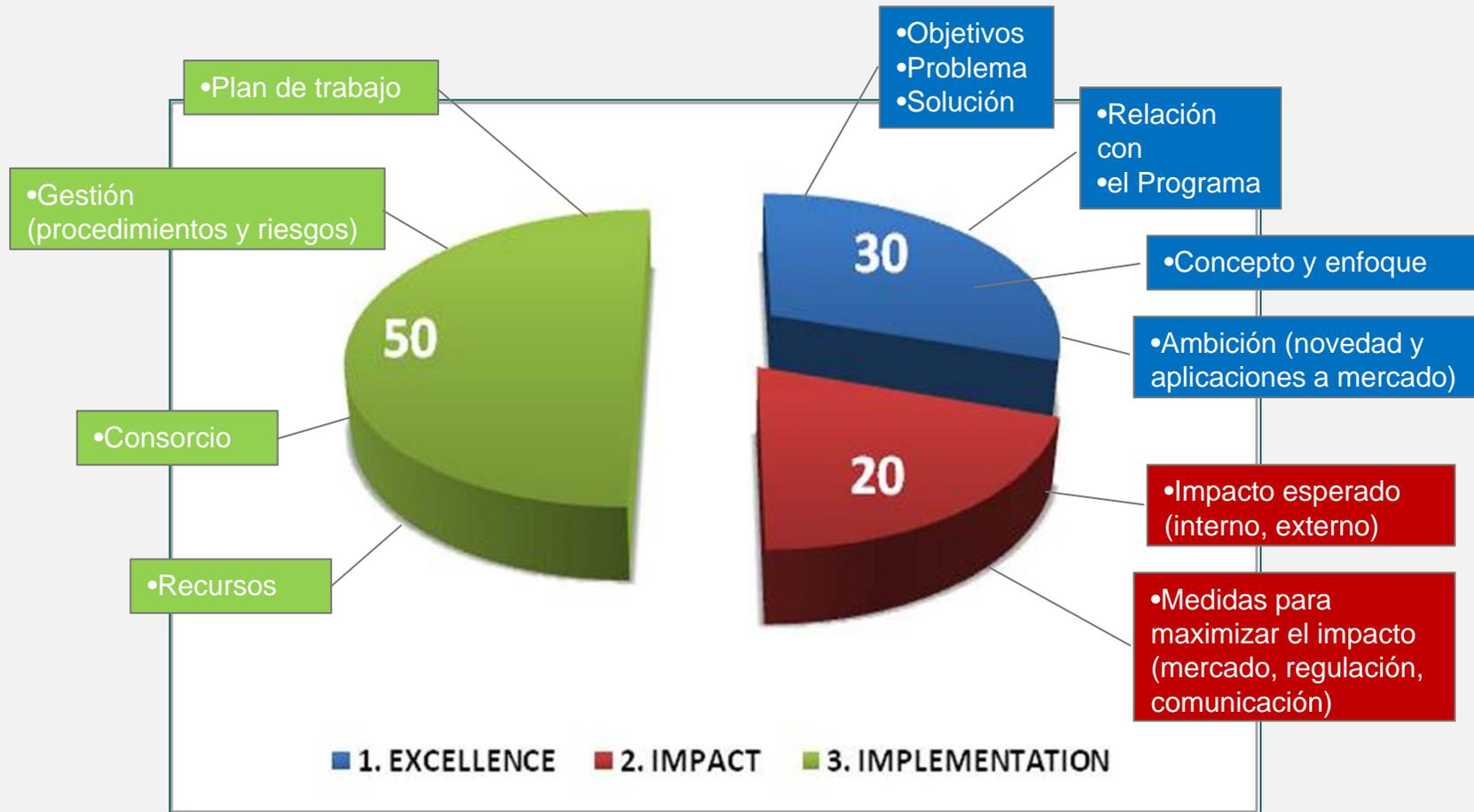


# Preparación de Propuesta: claves



Nada puede quedar sin respuesta

# Estructura de la Propuesta



# Recomendación: orden y síntesis

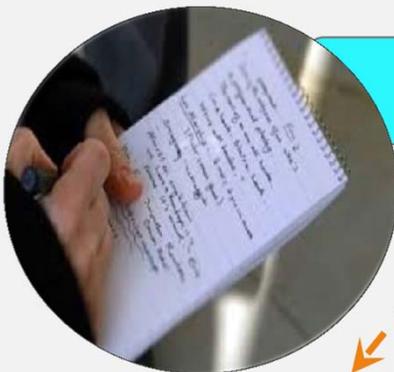


**ANÁLISIS**



**SÍNTESIS**

Lógica interna y sencillez



**RESUMEN**

**ESTRUCTURAS GRÁFICAS**

TABLAS

ESQUEMAS

GRÁFICOS

CANVAS

PESTLE

FOTOGRAFÍAS

DIAGRAMAS

CRONOGRAMA

**VARIABLES CUANTITATIVAS**

INDICADORES KPI'S

MAGNITUDES

DATOS ESTADÍSTICOS

CARTAS DE APOYO

**EVALUADOR**



# Recomendación: orden y síntesis

**biótica**  
FAST DETECTION FOR LIFE

**Political changes** could be induced by legionellosis risk

**Microbial monitoring** (bioterrorism) and **rapid alert** (bio-insecurity) have growing interest. Alliances for **biological risk surveillance** (multi-agency coordination network)

**Near Simultaneous Detection tests** are being accepted by regulations

Increase of **risk population** requiring medium and long-term strategies to anticipate **the impact of demographic development** (128 millions citizens in EU are aged between 55 and 80 years, representing about 25% of the total population potentially at Legionellosis risk)

POLITICAL

ECONOMICS

P

E

**EU branding & Silver Economy:** Europe, the best destination for seniors?

(**518 millions trips in 2020**, spending per trip 81.6 euros-day trip- and 852 euro-overnight trip-).

High impact of **outbreaks**: risk facilities are more concentrated in EU countries ranking tourism demand (France, UK, Germany and Spain, among others); **400,000 € per outbreak** (epidemiological investigation and sanitary costs).

**High penalties** to owners of facilities; Tendency to the **smart use of biocides**: encompassing use of biocide to actual risk based on the quick Legionella detection/quantification

Cheap on line analysis (**5-8 € per assay**)

Elevated **gross margins** and the possibility of achieving interesting **economies of scale** and scope for automated microbial sensor systems

**Changes in the population:** increasing of senior people (**elderly population +65 year old**, from 84.6 millions in 2008 to 151.5 millions in 2060 in EU Member States).

**Healthy environments in smart cities:** half of world population will be living in water stressed areas by 2025 and more than 7% of land in developing countries will be irrigated using wastewater.

**Increasing acceptance of early warning systems** (Continuous monitoring is essential to generate accurate warnings in a timely fashion), getting the results immediately in **smartphones** (App's, social networks...). **2 Billion Smartphone Users** By 2015.

**Solution for anticipating legionellosis outbreaks** at risk facilities (Portugal Outbreak-2014: 13 dead, 370 cases; NY Outbreak-2015: 12 dead, 128 cases; Spain 2 dead, 141 cases).

Effects of **climatic change**: increasing of length of summer favouring sustained level of active pathogen in water, 20-34 °C. 46% of global population is highly concerned for the **climatic change**. Negative effect on crop production and water scarcity can increase malnutrition and render a population more susceptible to diseases.

S

T

SOCIAL & ENVIRONMENTAL

TECHNOLOGICAL & LEGAL

**Viability of automation:** all-in-one packaging of reagents and mobile arm leading to a simple operability with no human intervention. High capability to be adapted to the requirement of every market segments.

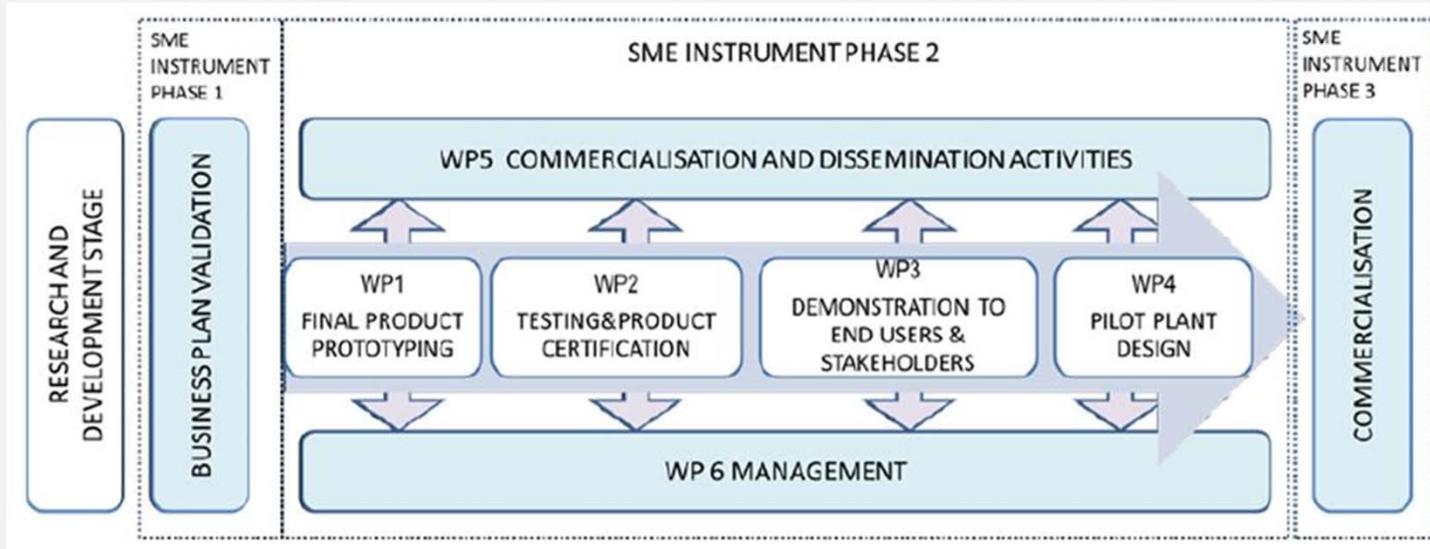
**Improper use of biocides and antibiotics:** awareness of **quick changes of Legionella level** by big players (for instance Nalco); dangerous *Legionella* levels after two-five days from the treatment; *Legionella* is developing **resistance**; hyperchlorination leads to corrosion of pipelines after five to six years of operation and cause human health problems related with **trihalomethanes** generation.

First online system to detect and quantify *Legionella* based on **Patented technology** (technological breakthrough with protected rights), and **AOAC certification** (validated and certified test method); **CE marking & Registered trademark**.

**Regulations on the Legionella control:** water quality policies and regulations supporting preventive risk management is a strategic outcome to be achieved by WHO (Water Quality and Health Strategy 2013-2020)

Advanced water distribution systems as comforts in developed world comes the risk of **mass distribution of pathogens** (growth and transmission of *Legionella* to occupants in buildings)

# Recomendación: componente visual



**ISO 17025 LABS:**  
Provide accredited analytical services. They offer Legionella analysis by different methods (culture, PCR, Legioid, etc). The customer chooses the method.

**THEIR CUSTOMERS:**

- RISK FACILITY OWNERS
- MAINTENANCE COMPANIES (USUALLY)

**MAINTENANCE COMPANIES:**  
Provide maintenance services for risk facilities. They are in charge of the control of the concentrations of Legionella and of taking the necessary action so that these levels do not reach dangerous concentrations. They can do the analysis themselves or they can outsource it to a laboratory.

**THEIR CUSTOMERS:**

- RISK FACILITY OWNERS

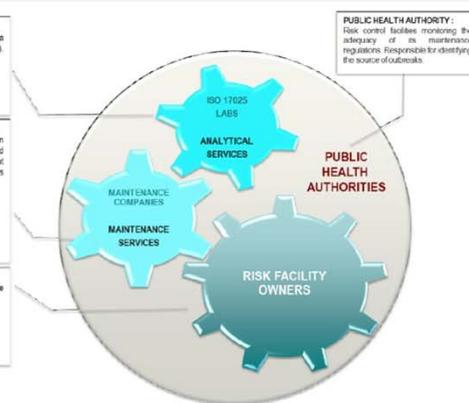
**ITS SUPPLIER OF LEGIONELLA ANALYSIS:**

- OWNED LABORATORY
- EXTERNAL LAB (USUALLY)

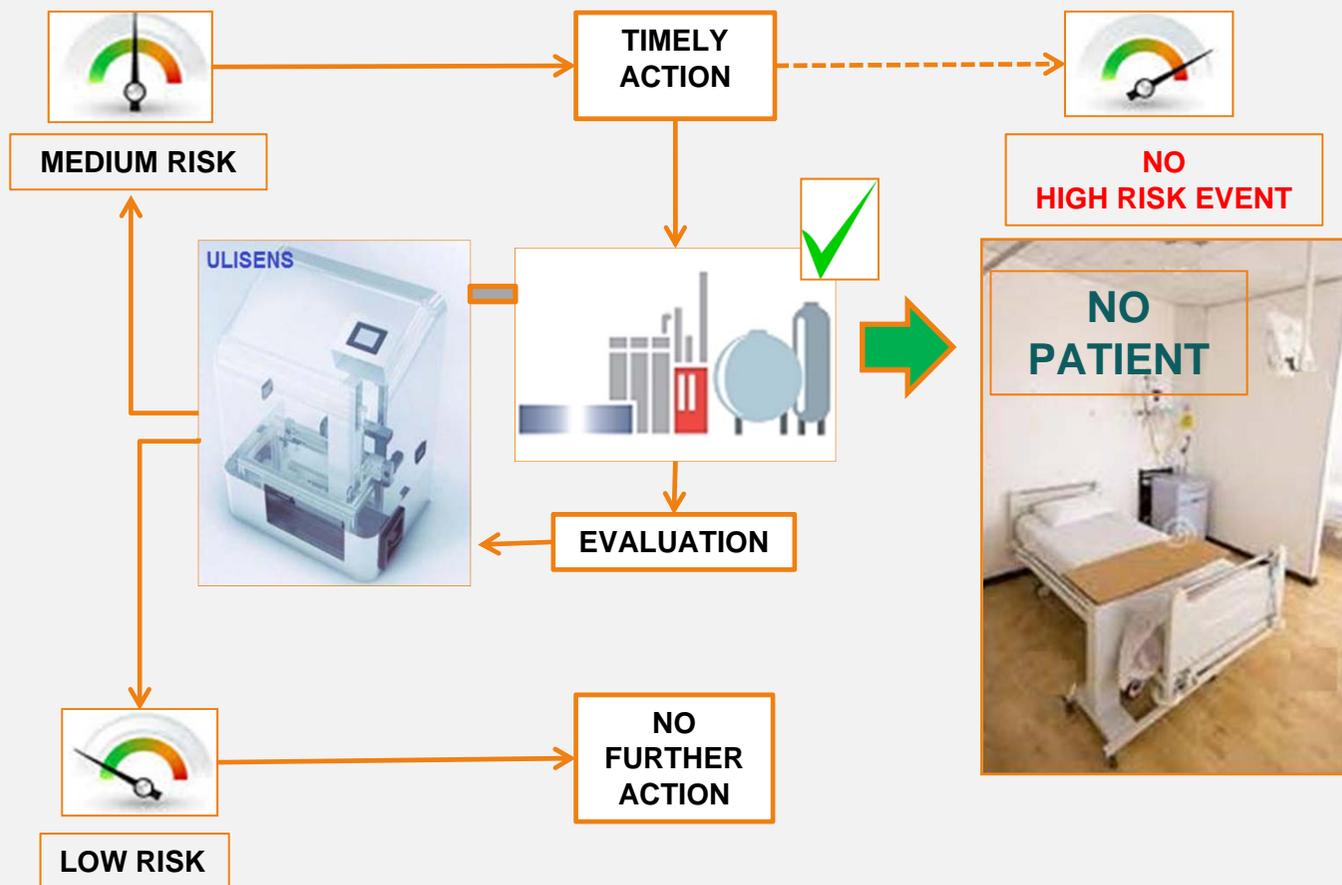
**HOLDER INSTALLATION OF RISK:**  
It is responsible for the control of the installation and possible damage that this could cause.

**LEGIONELLA CLEANING SERVICE PROVIDERS:**

- OWN LABORATORIES
- EXTERNAL LABORATORIES



# Recomendación: componente visual



# La propuesta de Biótica

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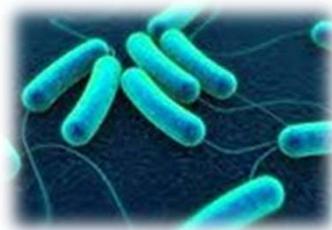
European Commission  
Research & Innovation - Participant Portal  
Proposal Submission Forms

**Horizon 2020**

**Call: H2020-SMEInst-2016-2017**

(Horizon 2020 dedicated SME Instrument 2016-2017)

**Topic: SMEInst-03-2016-2017**



**Type of action: SME-2**  
(SME instrument phase 2)

**Proposal number: 726499**

**Proposal acronym: ULISENS**

Ultra Legionella Immunoanalysis System for Early Sensing

Deadline Id: H2020-SMEINST-2-2016-2017

....factor suerte.....

$p(\text{Sí}) < 7\%$

EVALUACIÓN 1



Análisis y mejora



Nuevo intento

EVALUACIÓN 2



Puntuación 1 / corte 1

Puntuación 2 / corte 2



Puntuación 1 > Puntuación 2



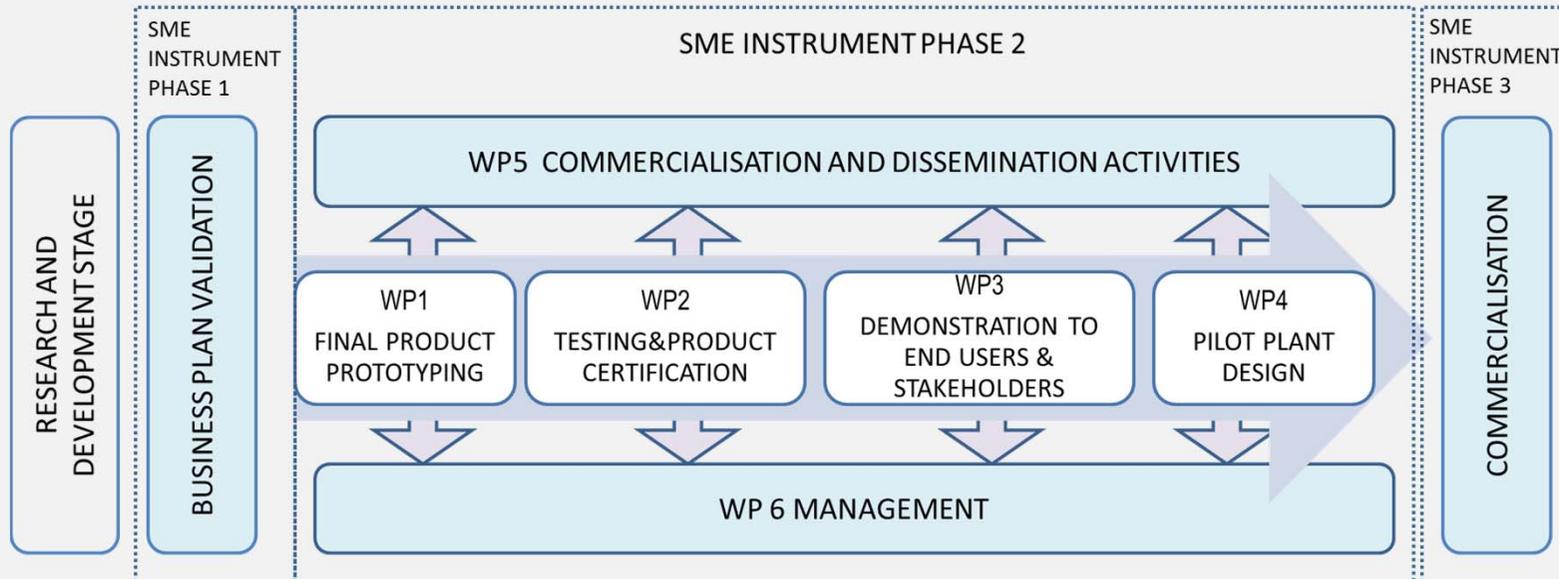
## Parte II

# Seguimiento del Proyecto

- 1 Project objectives
- 2 Management structure
- 3 Project activities
- 4 Budget and funding
- 5 Reporting and other obligations



# Work Packages



WP	WP title	Lead participant	Person-months	Start month	End month
1	FINAL PRODUCT PROTOTYPING	BIOTICA	22	1	7
2	TESTING	BIOTICA	25	8	12
3	DEMONSTRATION TO END USERS	BIOTICA	31	13	20
4	PILOT PLANT DESIGN	BIOTICA	24	21	24
5	COMMERCIALISATION & DISSEMINATION	BIOTICA	12	1	24
6	MANAGEMENT	BIOTICA	12	1	24

# Planning and duration

ULISENS	YEAR 1												YEAR 2											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
<b>Work packages and tasks</b>																								
<b>WP1. FINAL PRODUCT PROTOTYPING</b>	█	█	█	█	█	█	█																	
T 1.1. Final design and construction of ULISENS prototypes	█	█	█	█																				
T 1.2 Manufacturing pre-commercial units for testing & demorst.		█	█	█	█	█	█																	
<b>WP2. PRODUCT TESTING &amp; CERTIFICATION</b>								█	█	█	█	█												
T 2.1 Technical file elaboration								█	█	█	█	█												
T 2.2 Prototype testing								█	█	█	█	█												
<b>WP3. DEMONSTRATION TO END USERS</b>													█	█	█	█	█	█	█	█				
T 3.1 Installation & monitoring of demonstrators in stakeholders													█	█	█	█	█	█	█	█				
T 3.2 Training actions																	█	█	█	█				
T 3.3. Product reengineering process																		█	█	█	█			
<b>WP4. PILOT PLANT DESIGN AND IMPLEMENTATION</b>																				█	█	█	█	█
T 4.1 Industrial equipment selection for automated production																				█	█	█	█	█
T 4.2 Layout design, equipment acquisition and installation																				█	█	█	█	█
T 4.3 Definition of jobs and quality procedures. Pilot plant tests																						█	█	█
<b>WP5. COMMERCIALISATION &amp; DISSEMINATION ACTIVITIES</b>	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
T 5.1 Conducting workshops, publications and participation in fairs.			█	█	█	█	█	█	█	█	█	█												
T 5.2. Update of the commercialization plan	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
<b>WP6. MANAGEMENT</b>	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
T 6.1 Definition of project management procedures.	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
T 6.2 Administrative and financial management		█	█	█	█	█	█	█	█	█	█	█												
T 6.3 Innovation management									█	█	█	█												

# List of deliverables and milestones

- Deliverables:

Deliverable	Deliverable name	WP no	Lead participant	Type	Level	Delivery
1.1	Final product prototypes	1	BIOTICA	DEM	CO	7
2.1	Testing and Marking results	2	BIOTICA	R	CO	12
3.1	Demonstrations to end users	3	BIOTICA	R	PU	20
4.1	Pilot plant prototype	4	BIOTICA	DEM	CO	24
5.1	Commercialisation plan	5	BIOTICA	R	CO	12
5.2	Communication report	5	BIOTICA	DEC	PU	12
5.3	Updated commercialisation plan	5	BIOTICA	R	CO	24
5.4	Updated Communication report	5	BIOTICA	DEC	PU	24
6.1	Data management plan	6	BIOTICA	R	PU	6
6.2	Final activity report	6	BIOTICA	R	PU	24

- Milestones:

Milestone	Milestone name	Related WP	Month	Verification
1	Prototypes has been finished and certified	1 and 2	12	Demonstrators
2	Products have been demonstrated to end users and potential partners	3	20	Report
3	Pilot plant is completely designed	4	24	Demonstrator

- Templates for technical and financial reporting in due time (periodic/final)
  - *Template for timesheets*
  - *Template for financial reporting*
  - *Template for Use of Resources*
- There will be an audit at the end of the project, so it is required to have everything 'under control'
- It is convenient to make an internal 6-monthly financial justification in order to review state of costs and expenditures
- Reports, deliverables and so on with some anticipation in order to prepare properly the required documentation

*Fechas no negociables!*

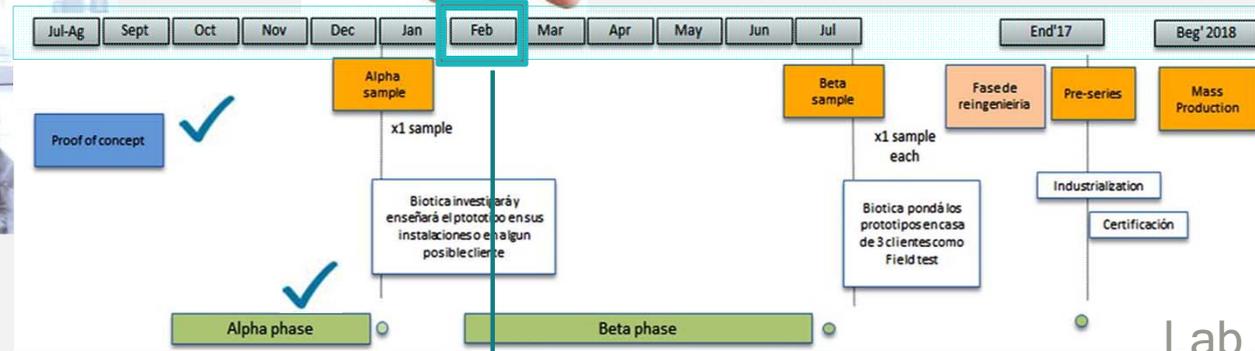
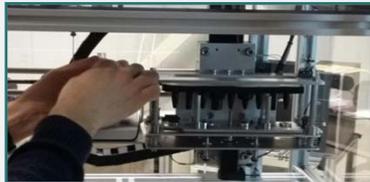
# Estado actual de ULISENS



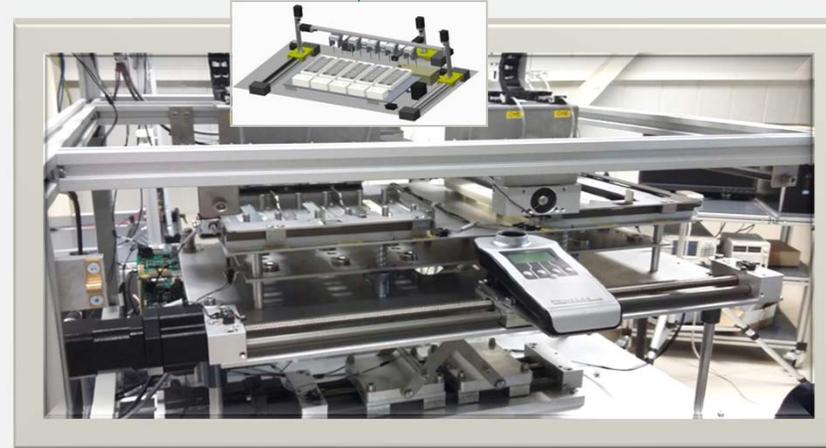
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Tower



Lab

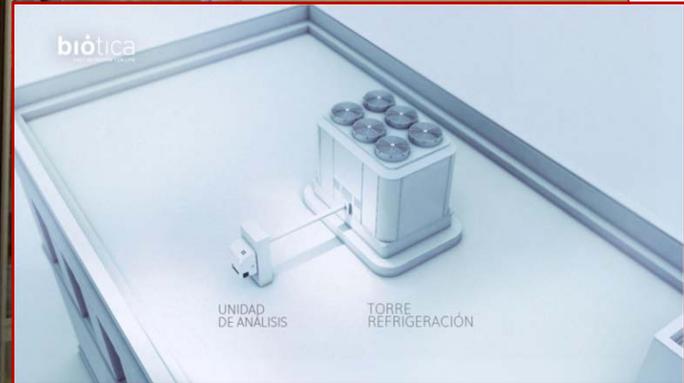
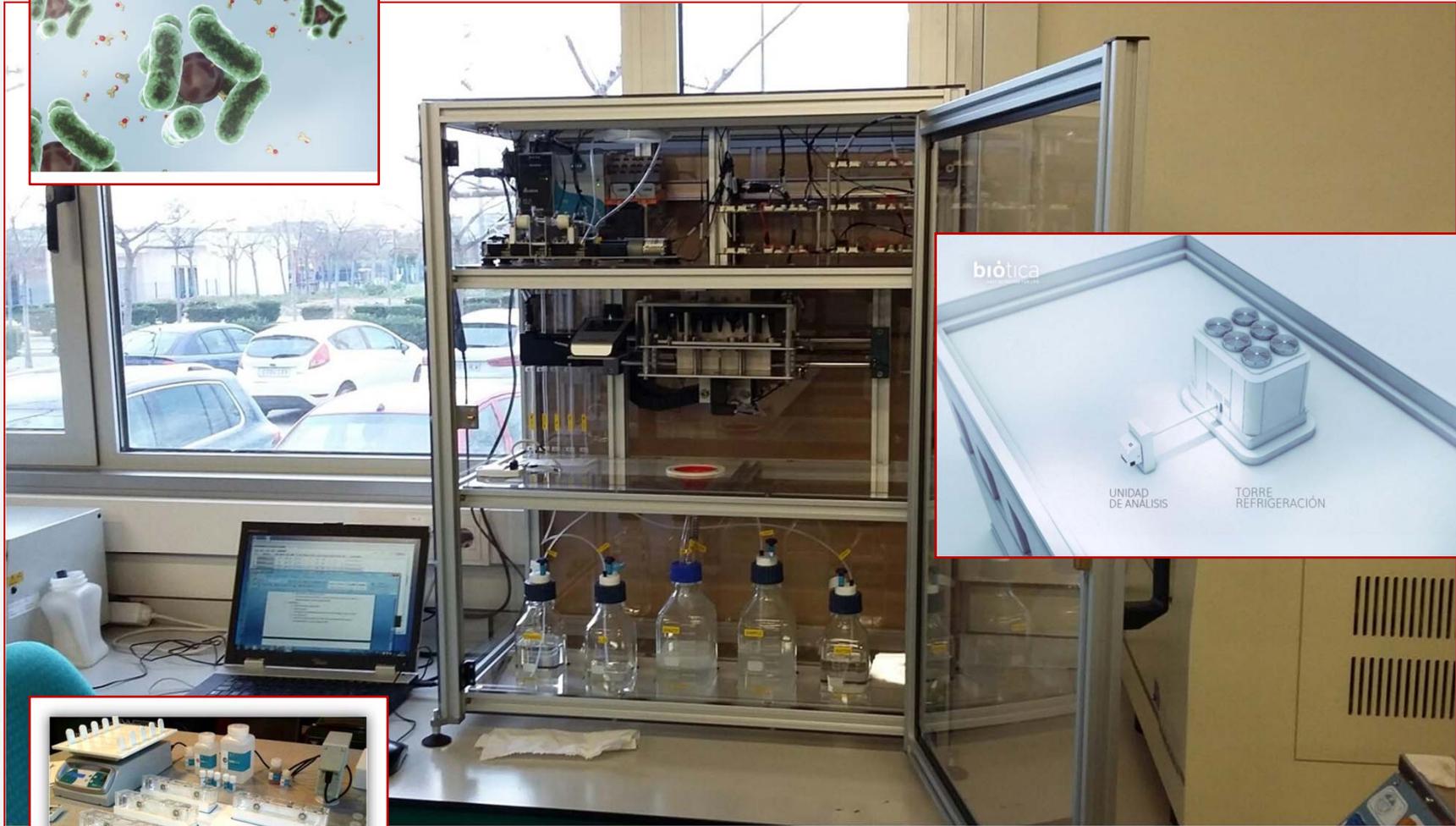


# Hacia el futuro



# biótica

FAST DETECTION FOR LIFE



La ignorancia es aliado del miedo

Infórmate y fórmate!

La inocencia es aliado del atrevimiento

Atrévete, pero informado y formado!

Preparación y perseverancia

A trabajar!

