



Delft Cluster Partner



What is needed to get trust in a technology

**Derk van Ree**



- Informed buyers decision?
- Innovative technology?
- Design error/lack quality control?
- Heterogeneity?



Nicole PISA workshop 2002



**Our subsurface technology is faster, cheaper and better (Pisa 12<sup>th</sup> century)**

## What is needed to get trust in a technology?

n I do not know

n You tell me

n **Different stakeholder perspectives**

n Vendors

n Buyers

n Authorities

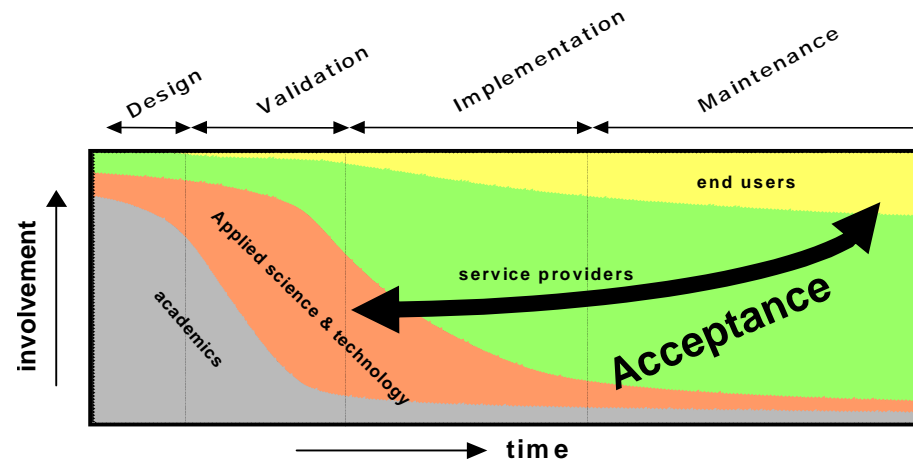
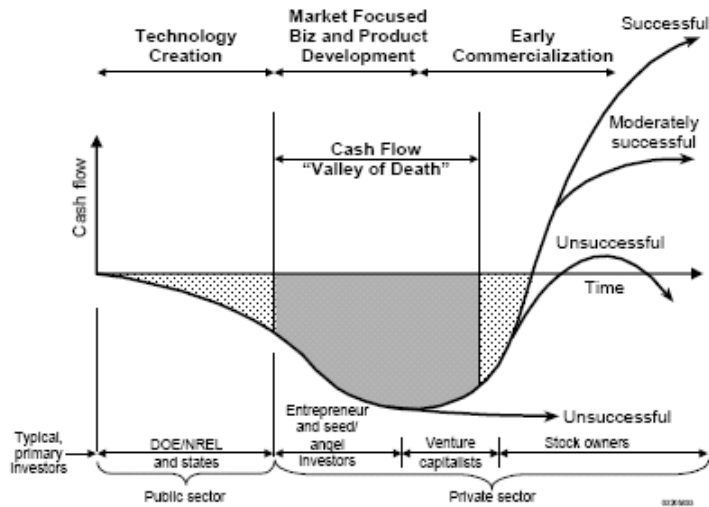
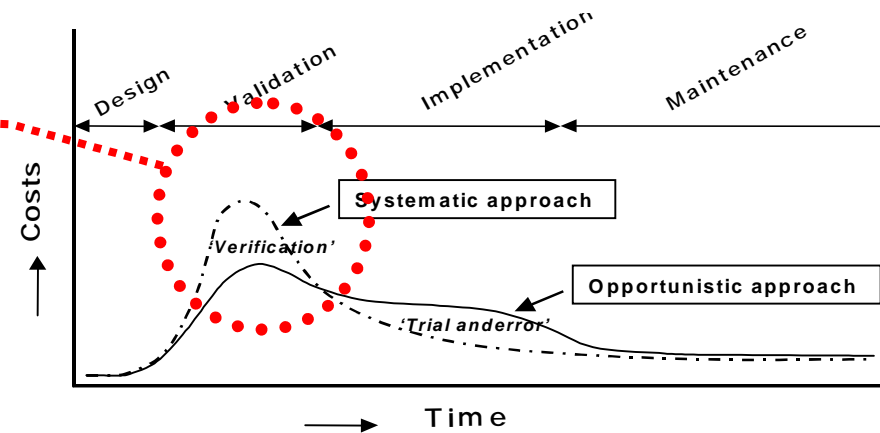
n Consultants

# Consequences

- n **Slow uptake of innovative technologies**
- n **Lower competitiveness**
  
- n **This also holds true for site characterisation and monitoring technologies**

# Development concept

Valley of Death



# Site characterisation and monitoring technologies

**Innovation can be seen/described as a transport system (time to market, profitability to stakeholders).**

**In this field of technology a mobility crisis exists.**

- Market mostly legislation driven
- Market needs not well defined (Science ↔ end users)
- Lack of adequate (verified) technologies
- Existing knowledge 'hidden' to potential users
- Profits not available as return on investment

**EETV-system can partially address these issues.**

## European Environmental Technology Verification system

- n **Independent verification by a recognized body in an objective and transparent way may improve buyers confidence and support innovation**

*Definition:* To verify,  
to establish or prove the truth of the performance of a technology under specific predetermined criteria or protocols and adequate data-quality assurance procedures, with reference to predetermined criteria.

Prototype testing	Pilot testing	Demonstration	Verification	Certification
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# RTD activities for the implementation of an European ETV system



Desk studies

1st IPTS contract

2nd IPTS

General structure of the ETV system

EURODEMO

R&D

PROMOTE

Problems, perspectives, sectoral networks & protocols

TESTNET

POLICY

Analysis of concepts    Testing of concepts    Legislative Proposal?    Implementation of ETV system?

2004    2005    2006    2007    2008    2009    2010

AIRTV

LIFE PROJECT

Pilot ETV scheme

Delft Cluster Partner

Courtesy Elena Domínguez  
DG Research, Environment

# RTD FP6 PROJECTS



- EURODEMO, PROMOTE and TESTNET
- Total EC contribution 4.1 M€. Total cost 6.3 M€
- Participation of 45 organisations from 18 EU countries



# PROMOTE consortium

- n **DECHEMA Society for Chemical Engineering & Biotechnology, Frankfurt/Main, Germany (Co-ordinator)**
- n **Dr. Thomas Ertel, Esslingen, Stuttgart, Germany**
- n **GeoDelft, Delft, The Netherlands**
- n **Polish Geological Institute, Warszawa, Poland**
- n **CSIC Department of Environmental Chemistry, Barcelona, Spain**
- n **University of Stuttgart, Stuttgart, Germany**
- n **IMW - Innovative Messtechnik Dr. Weiss, Tübingen, Germany**
- n **Municipality of Bydgoszcz, Poland**
- n **VITO, Flemish Institute for Technological Research, Mol, Belgium**
- n **CEN - European Committee for Standardization, Brussels, Belgium**
- n **Université Louis Pasteur Strasbourg, France**
- n **Slandi Sp.z.O.O., Michalowice, Poland**

## *PROMOTE: 'bottom-up' approach*

Ideal ETV

Basic characteristics ETV

- Independent
- Transparant
- Status
- European

EU ETV - PROMOTE

Current 'State  
of the Art'

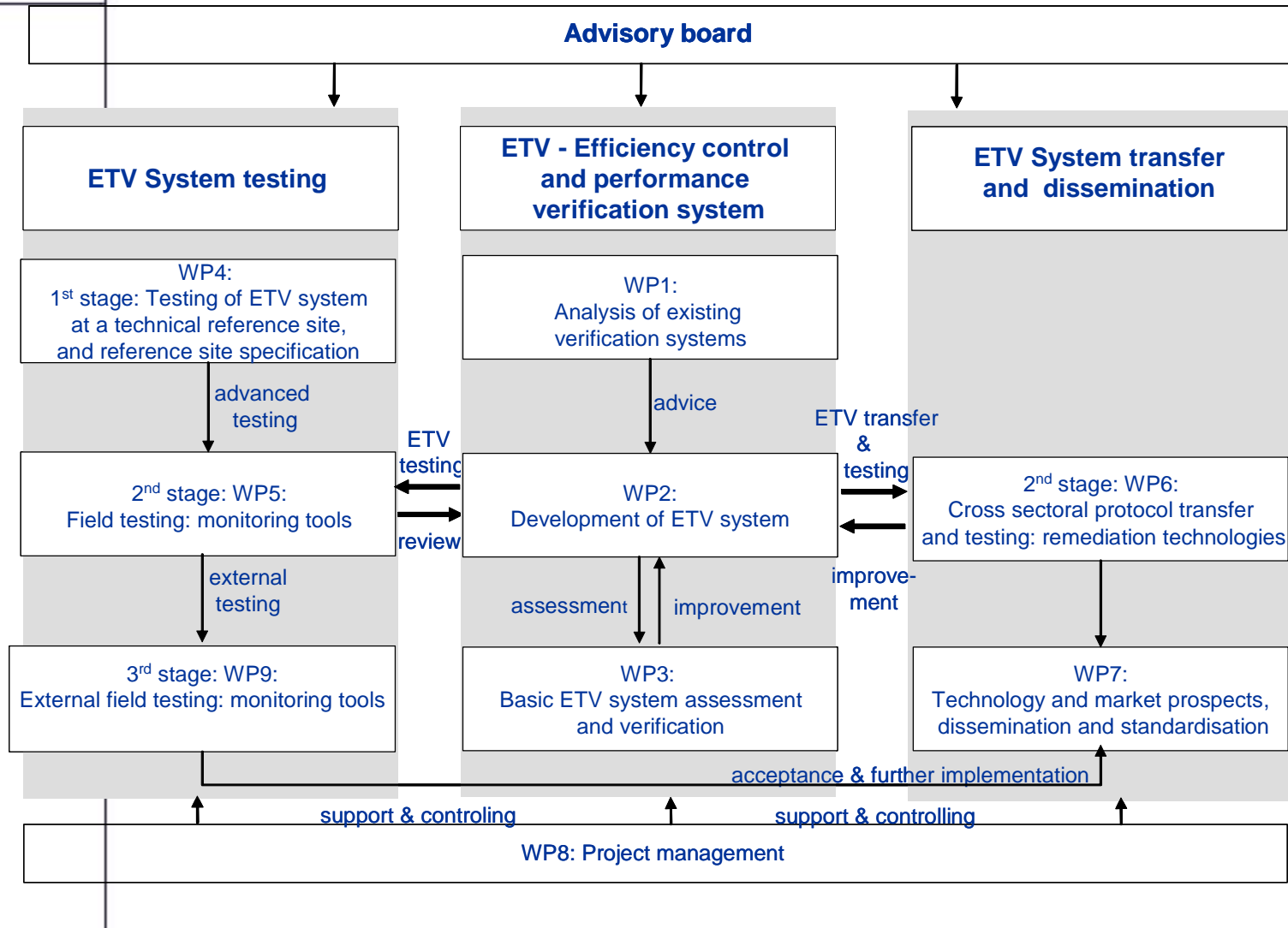
Barriers (ETAP, USA SBA)

Criteria (costs, time, acceptance)

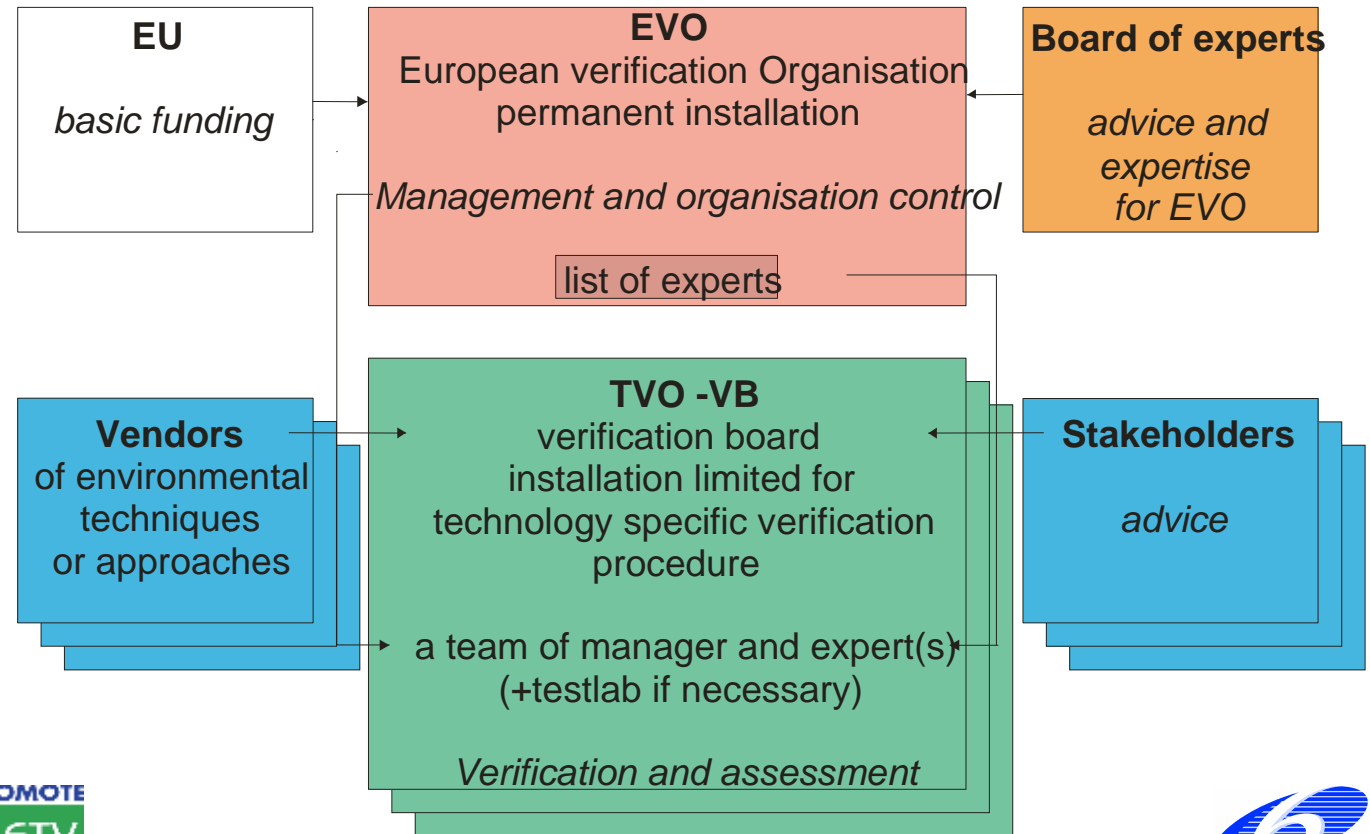
Current testing intensity

Technology/market specific

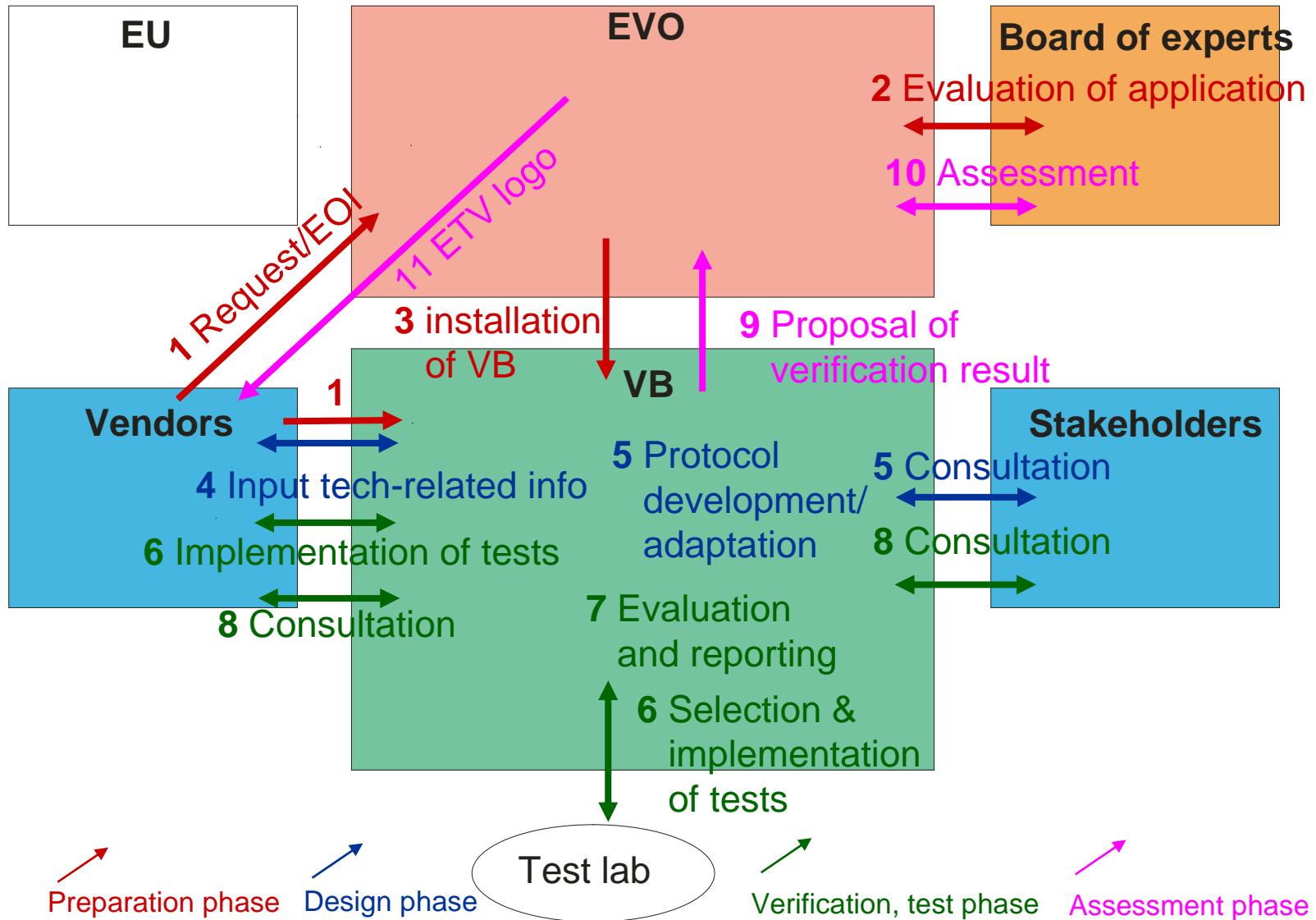
# PROMOTE PROJECT STRUCTURE



# ETV System



# Draft ETV Procedure



## *Technologies and test sites*

### **On-site and in-situ monitoring and sampling devices for site characterisation:**

- n **A sensor array for volatile organic compounds in the unsaturated zone (in direct push cone)**
- n **A fibre optic photometer for dissolved PAH & BTEX in groundwater (in direct push cone)**
- n **A photometer for dissolved Phenols, DOC, and Electron acceptors**
- n **Active and passive multilevel groundwater sampling systems**

# Technologies and test sites



Reference Site



1<sup>st</sup> Field site



Site Location Map



0 500 1000m

Property line of ex sewage treatment plant in old gas-works  
Groundwater flow direction

Further field sites will be selected during the project

## Other steps

- n **ETV system transfer to related environmental technologies in cooperation with related EU projects**
- n **Setting-up a “CEN Workshop” procedure to come to a common understanding of verification requirements**

## Relevance to NICOLE network

- n **Topic closely related to NICOLE interests**
- n **NICOLE can support (future) activities by:**
  - n Giving stakeholder input
  - n Identify priorities in technology verification
  - n Act as a potential source of testing sites
- n **Expert contribution may be organised through a NICOLE working group on site characterisation and monitoring**

## Acknowledgements

- n **PROMOTE consortium partners**
- n **Workshop organisers**

**Questions ?**