

# Research towards successful application of PLF in dairy farms

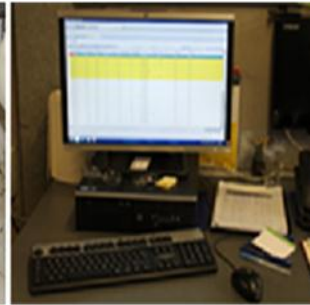
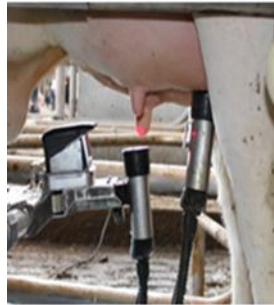
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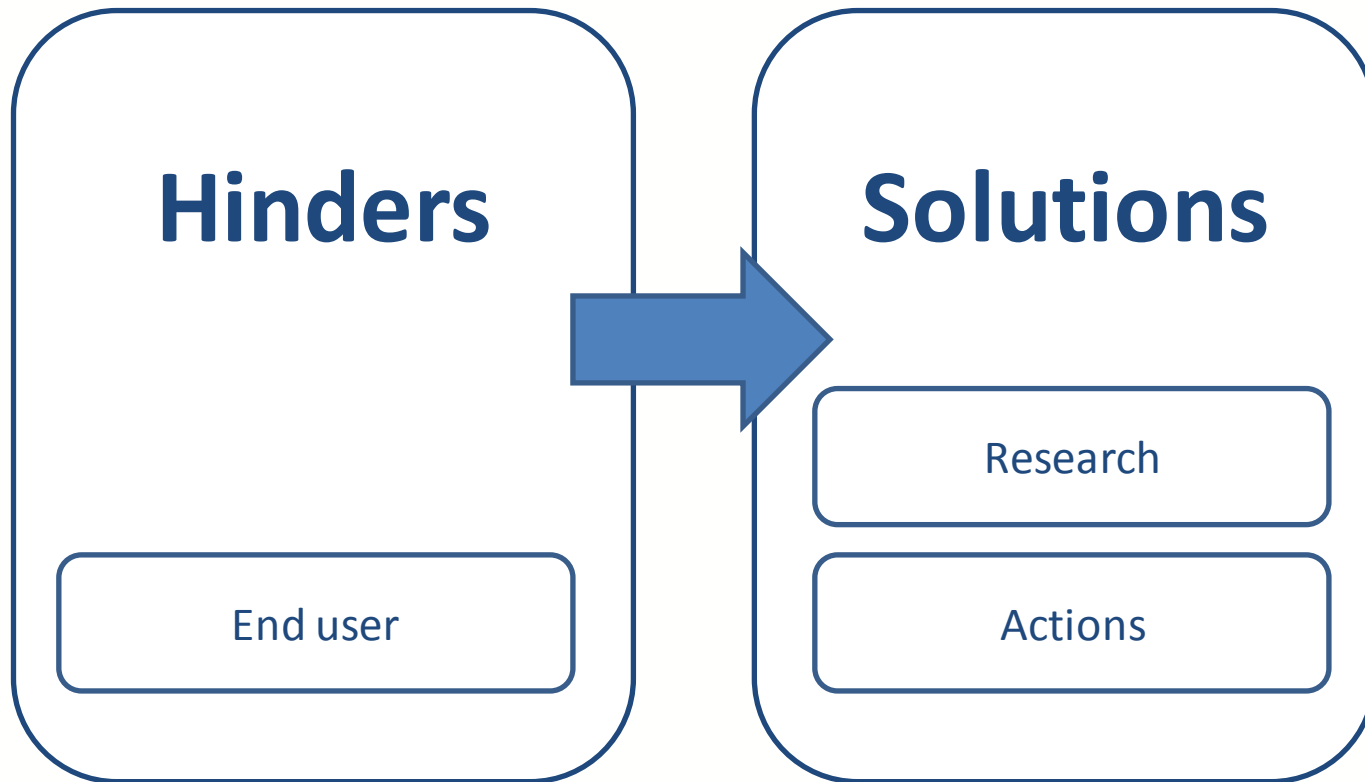
# Introduction

Wide range of sensors ...



... limited PLF application in dairy farms

# Aim



# Aim

**Hinders**

End user

# Aim



# Aim



Dairy farmer



Preference

Daily use

Net economic benefit

# 1. Farmers' preference

## Conjoint analysis :

- High specificity → no false positive cases
- Small time window → no early detection

(Mollehorst et al., 2010)

Mastitis  
detection

Dutch  
farmers

# 1. Farmers' preference

Discrete choice experiment:

Lameness  
detection

Heat  
detection

ONGOING  
ILVO  
RESEARCH

Flemish  
farmers



# 1. Farmers' preference

Knowledge can be used :

## 1. Development new sensors/detection algorithms

e.g. ↓ false positives:

- deal with normal variation
- set individual cow thresholds

→ Synergistic control (SGC)

Presentation 5.4



ONGOING  
ILVO  
RESEARCH

# 1. Farmers' preference

Knowledge can be used :

## 2. Specific communication campaigns

better inform farmers about benefits of early detection

e.g. Decrease in milk production :

from 8 months before upto 5 months after diagnosis/treatment

(Green et al, 2002; Archer et al, 2010, Reader et al, 2011)

# 1. Farmers' preference

Knowledge can be used :

## 2. Specific communication campaigns

spread information about use of sensors

**“ Cow sensor platform”**



**KU LEUVEN**



**“[www.koesensor.be](http://www.koesensor.be)”**

**Poster 9.5.12**



# 1. Farmers' preference



# Aim



Dairy farmer

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## 2. Daily use

Incorporated sensors → appropriate use ???



e.g. 3% of mastitis alarms →  
checked by farmer

(Hogeveen, 2013)

Possible reasons:

Lack of SOP → what to do ?

## 2. Daily use

RESEARCH  
APPLICATION  
call 2014

New research focus:

Detection:  
**disease**



Daily measurement:  
**symptoms**  
e.g. conductivity

Detection:  
**cows at risk**



Daily measurement:  
**risk factors**  
e.g. milk flow curves



## 2. Daily use

Applied on  
3 cases

Mastitis

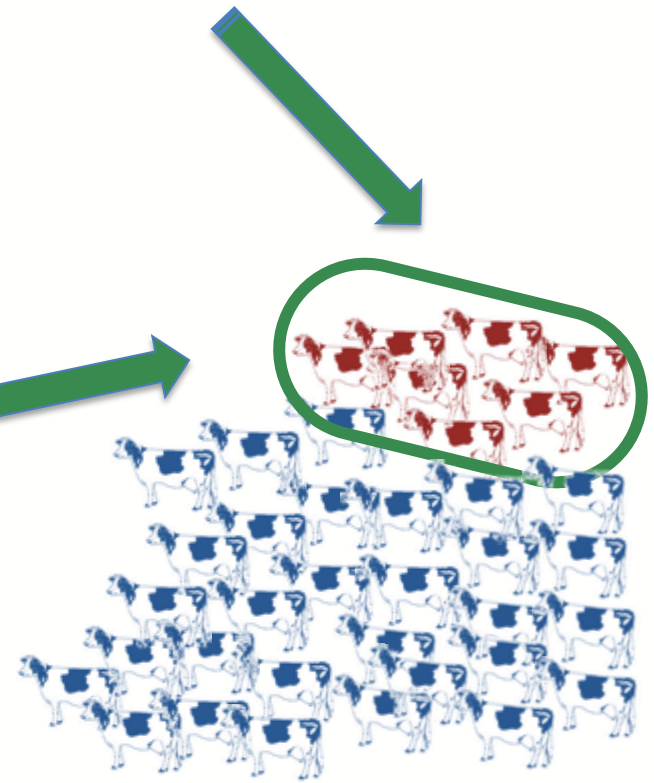
Metabolic disease

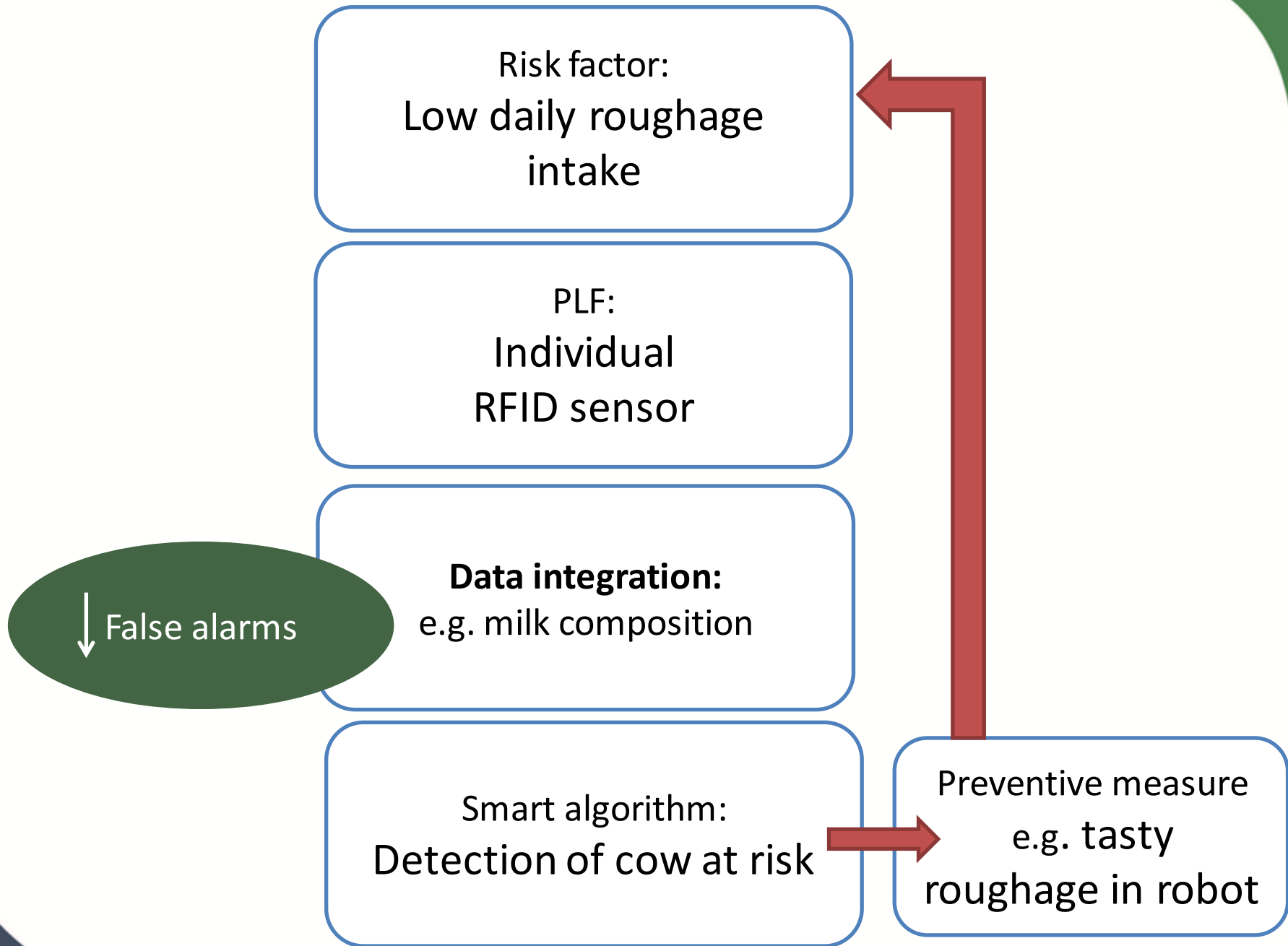
Lameness

(automatically)  
apply  
preventive measures

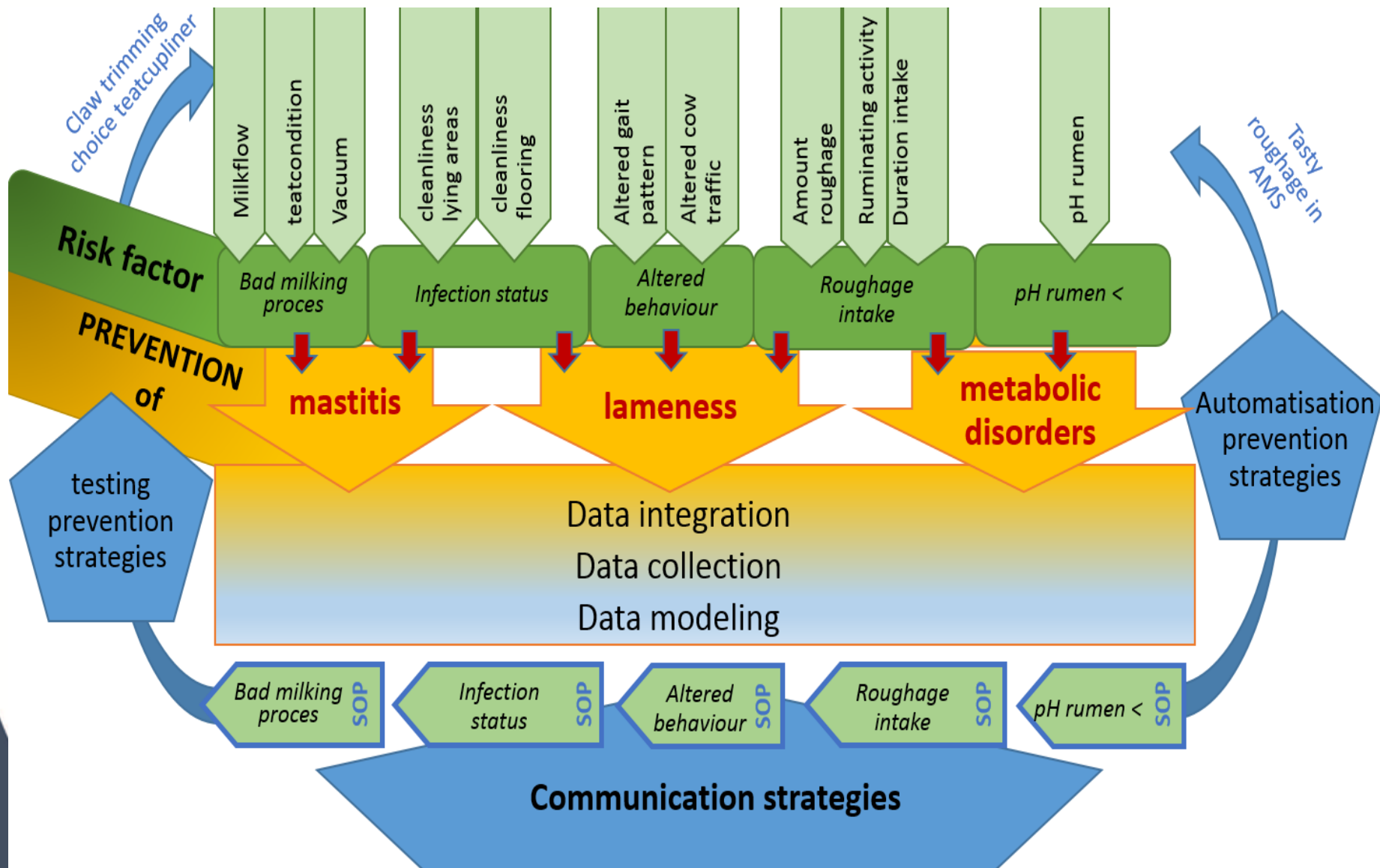
From all cows

→ Select only the 'cows at risk'





# European collaboration !?



# Aim



Dairy farmer

Preference

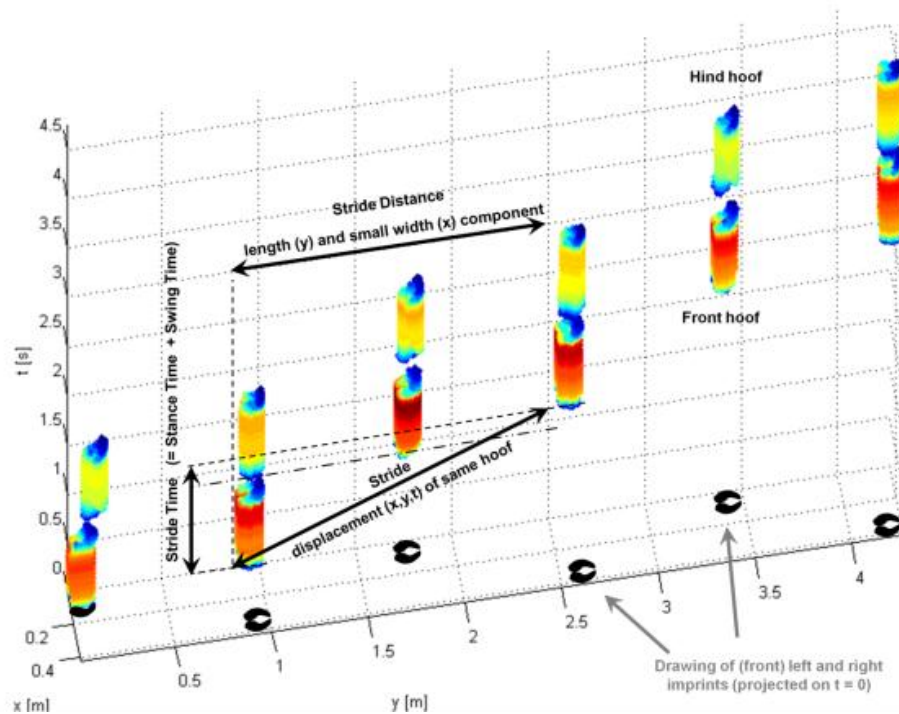
Daily use

Net economic benefit



# 3. Net economic benefit

## 1. Reduce production cost of sensors → downscaling



# 3. Net economic benefit



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# 3. Net economic benefit

## 2. Demonstrate real benefit of early treatment

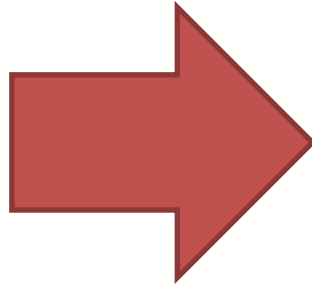
e.g. after early lameness detection



RESEARCH  
APPLICATION  
call 2014

# Conclusion

Knowledge of  
what **impedes** the  
use of PLF



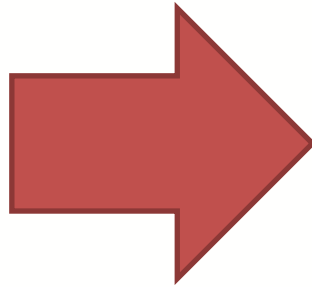
- Adapted sensor **development**
- Promote **incorporation** in practice
- Improve the **daily use** of PLF

COOPERATION



# Conclusion

Knowledge of  
what **impedes** the  
use of PLF



- Adapted sensor **development**
- Promote **incorporation** in practice
- Improve the **daily use** of PLF



COOPERATION

# Thanks for you attention

Special thanks to :

- all my colleagues for there input

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