

Interreg

CENTRAL EUROPE



European Union
European Regional
Development Fund

TOGETHER

TAKING
COOPERATION
FORWARD



Project Together Closing Conference

Untapped potential of Energy Efficiency in Public Buildings

Zagreb - 10 April 2019



Climbing **TOGETHER** towards Energy Efficiency



Antonio Zonta - Provincia di Treviso

Project Partners

Introductory
Question

TOGETHER key
concepts -
The CLIMB

The new Energy
Management
System - The
PEAK of the
mountain



PROJECT PARTNERS



PROVINCIA
DI TREVISO



Univerza v Mariboru



HEGYVIDÉKI
ÖNKORMÁNYZAT



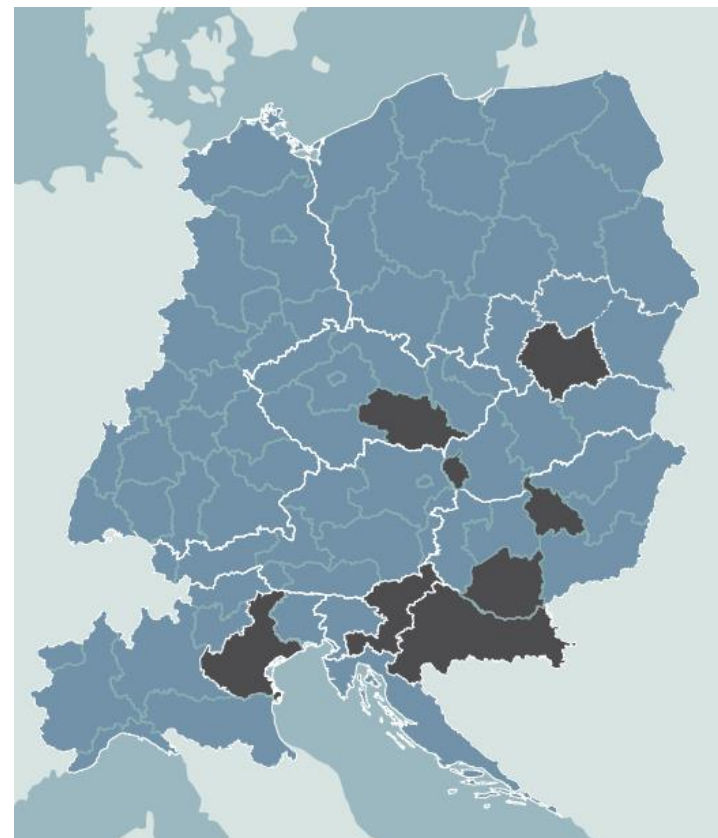
Polska Sieć
Energii Ciepłej



SLOVAK
INNOVATION
AND ENERGY
AGENCY



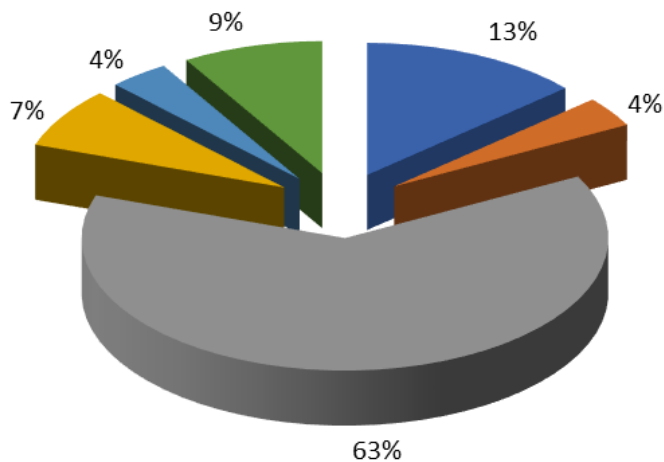
PAKS
az együttműködés városa



THE PILOT BUILDINGS CLUSTERS

Where are the partners looking for Energy Efficiency?

- 8 project partners
- 8 pilot building clusters
- 85 buildings
 - 47 belonging to PPs,
 - 38 belonging to 15 APs



- Administrative building
- Building for health services
- Building for education services
- Building for culture
- Building for sport activities
- Another type of building - accommodation



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WHAT IS A BUILDING?

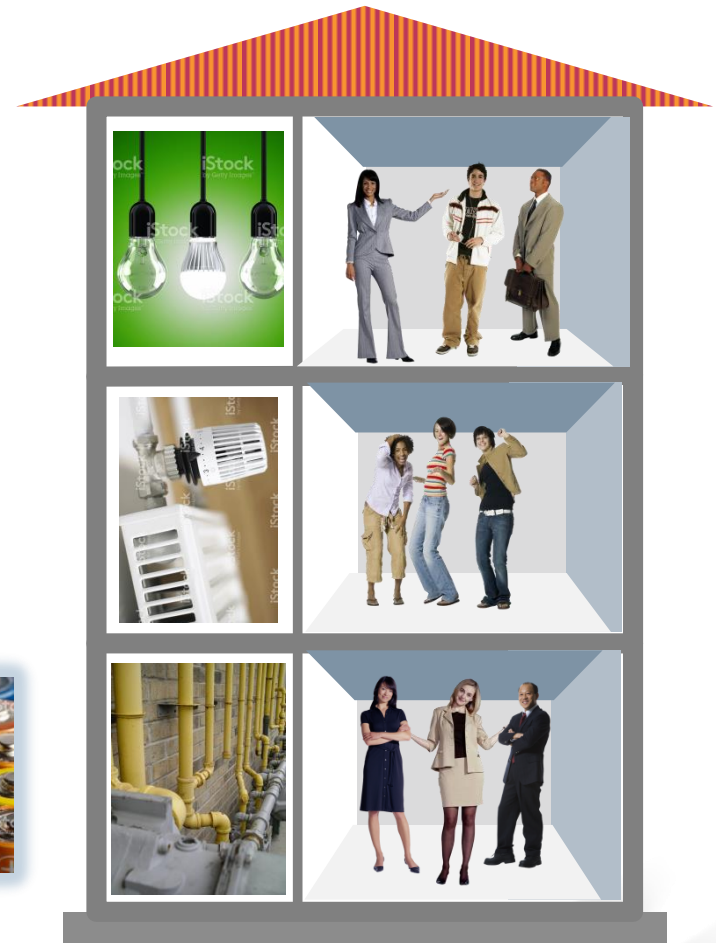
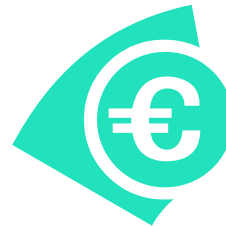
Although it might seem strange to start the presentation of a project with such a question, it is probably the search for an appropriate answer that brought 8 partners from 7 European countries to work together to achieve or to improve Energy Efficiency in public buildings, sharing their previous experiences in:

- Technology for energy efficiency
- Energy (smart) metering
- Users participation in processes related to public real estate management



WHAT IS A BUILDING?

A building is not only a shell
It also contains technologies
And, unlike many engineers
think, it's made of spaces
And - last but not least - of
people
Its operation requires a
daily amount of **energy**
and of **maintenance**
activities,
which **are not** independent
from how the building is
used, and are worth **money**



Project Partners

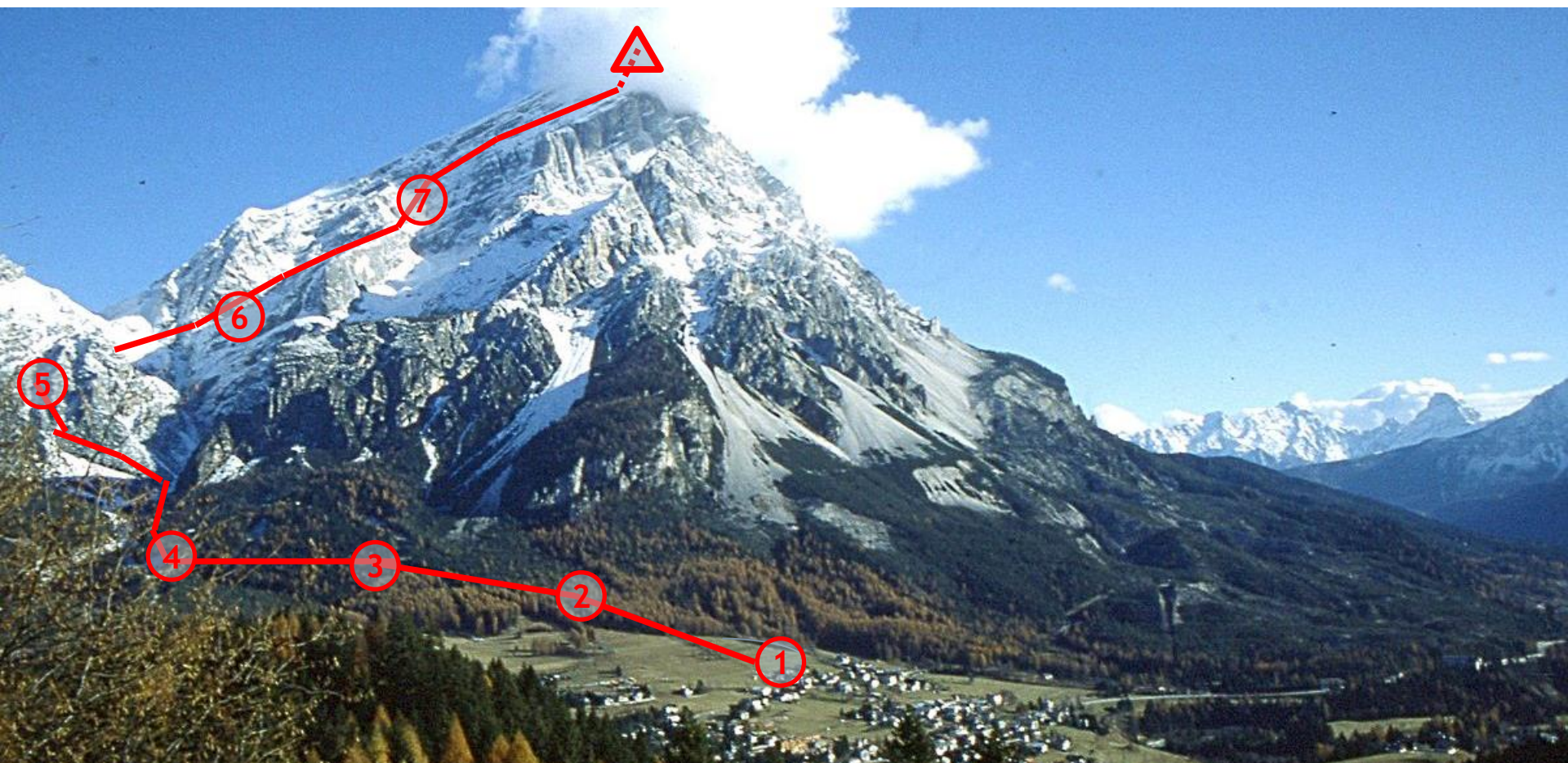
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THE CLIMB



1. **Holistic vision of the building**
2. High-resolution, real-time energy metering (Smart Metering)
3. Behavioural & Analytical DSM
4. Energy Audit (Technological & Social)
5. Re-thinking the role of public officers/public buildings owners
6. Tools for users involvement / Building Alliance / Living Lab / Gamification
7. Financial & Contractual tools: EPC, EPIC

The first consequence of the answer to the previous question is the need for an holistic vision of the building.

		Building		
		Technology	Space	Relations/ behaviours
Roles of people involved	Owner			
	Manager			
	Final user			

A building is really Energy Efficient when all its components are Energy Efficient and well interlinked.

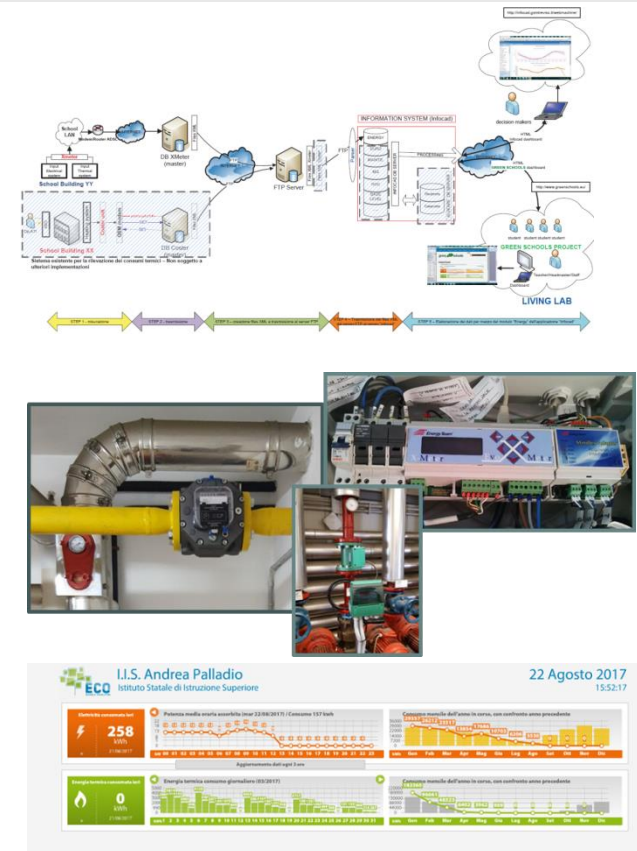
Unfortunately, this is much more easily said than done, and the achievement of Energy Efficiency requires, besides technology, the development of specific skills and tools



TOGETHER KEY-CONCEPT 2

1. Holistic vision of the building
2. **High-resolution, real-time energy metering (Smart Metering)**
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Real time Measurement of energy consumption requires the development of an IT system and some mechanical work in existing installations. This is not always an easy job.



Nevertheless, it's the only way to provide users with an effective feedback, stimulating their contribution to save energy in the building



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Behavioural DSM refers to management of the individual energy behaviour of direct consumers

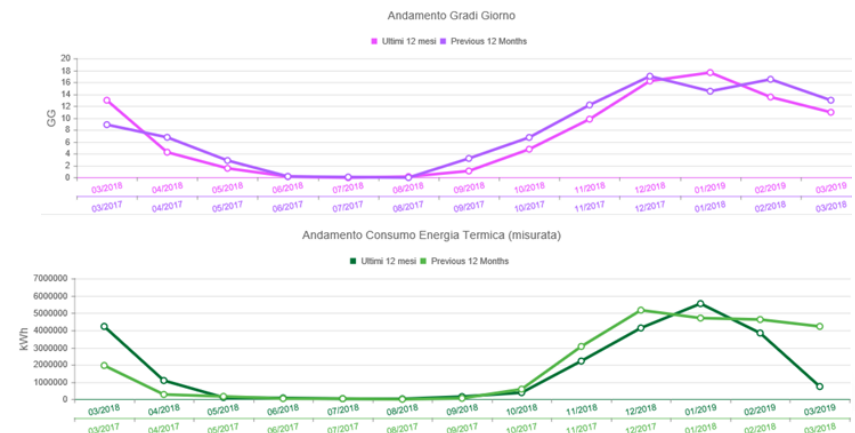
Analytical DSM focuses on the actions people take to alter energy use as a result of data analysis and equipment monitoring.

More generally speaking, the acronym **DSM** can be referred to Energy Efficiency achieved through non-technological measures or through the pursuit of the best use of existing technologies



TOGETHER KEY-CONCEPT 3

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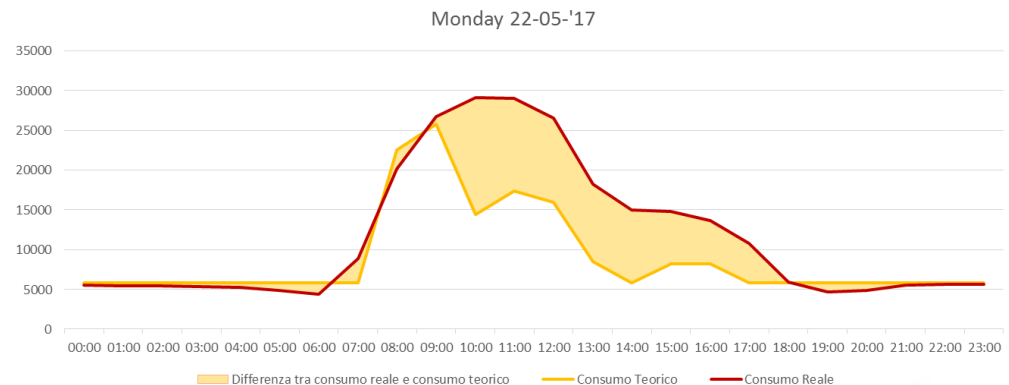


TOGETHER KEY-CONCEPT 4

1. Holistic vision of the building
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7. Financial & Contractual tools: EPC, EPIC

Location	Device	Power Consumption (W)	Usage	Number of units	Daily Consumption (KWh/Day)
Special classrooms	Apple TV	1,5	24\7	2	0,1
	Router Apple	8	24\7	2	0,4
Servers room	Server + PC	100	24\7	9	21,6
	Switch HP	795	24\7	1	19,1
	Switch Tp-Link	11,2	24\7	3	0,8
	Mac (Server)	100	24\7	2	4,8
	Condizionatore	860	24\7	1	20,6
Vending Machines	Necta Astra (caffè)	142	24\7	1	3,4
	Necta Samba (bibite e snaks)	630	24\7	4	60,5
	Necta Canto (caffè)	175	24\7	2	8,4
Chemistry Laboratory	Frigorifero INDESIT	14	24\7	1	0,3
Infirmary	Frigorifero IGNIS	25	24\7	1	0,6

Theoretical load analysis



Comparison between theoretical consumption and measured consumption



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7. Financial & Contractual tools:
EPC, EPIC

- Capacity building program structured on a master Train of Trainers session and in Local Trainings adapted to each partner's particular needs to promote the new holistic vision and the DSM approach among public officers
- Political buy-in program for local public administrators



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- Starting also from previous experiences of some of the project partners such as the Euronet 50/50 project (PNEC and EAV) and the Green Schools competition (Treviso) a Building Alliance Tool has been developed, to promote savings by sharing economic advantages between users and the public owner of the building.
- Other participation tools include The Living Lab model
- and gamification (Greenplay Project, and again Euronet 50/50 and Green Schools)

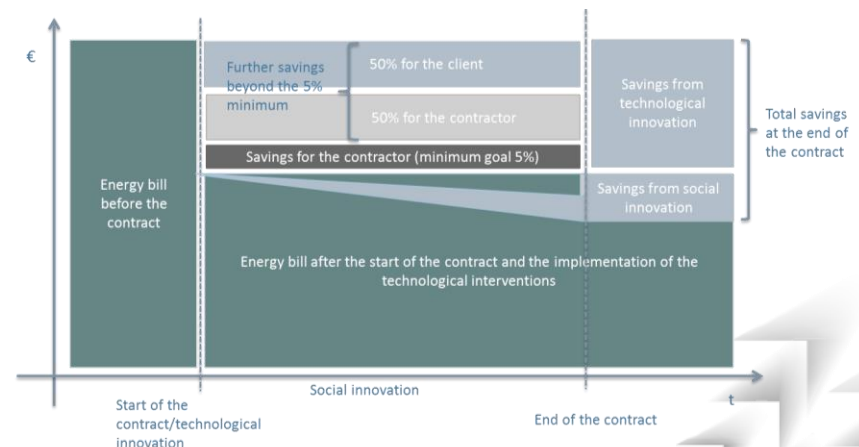
European
Network of
Living Labs

green  schools



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7. **Financial & Contractual tools: EPC, EPIC**

Energy Performance Contracts (EPC) have proved to be effective tools to improve energy efficiency in public buildings. EPCs are traditionally based on technological investments. TOGETHER has enhanced this contractual formula, integrating technology with behavioural and analytical DSM measures. This new contractual tool has been identified as «Energy Performance Integrated Contract» (EPIC).



Project Partners

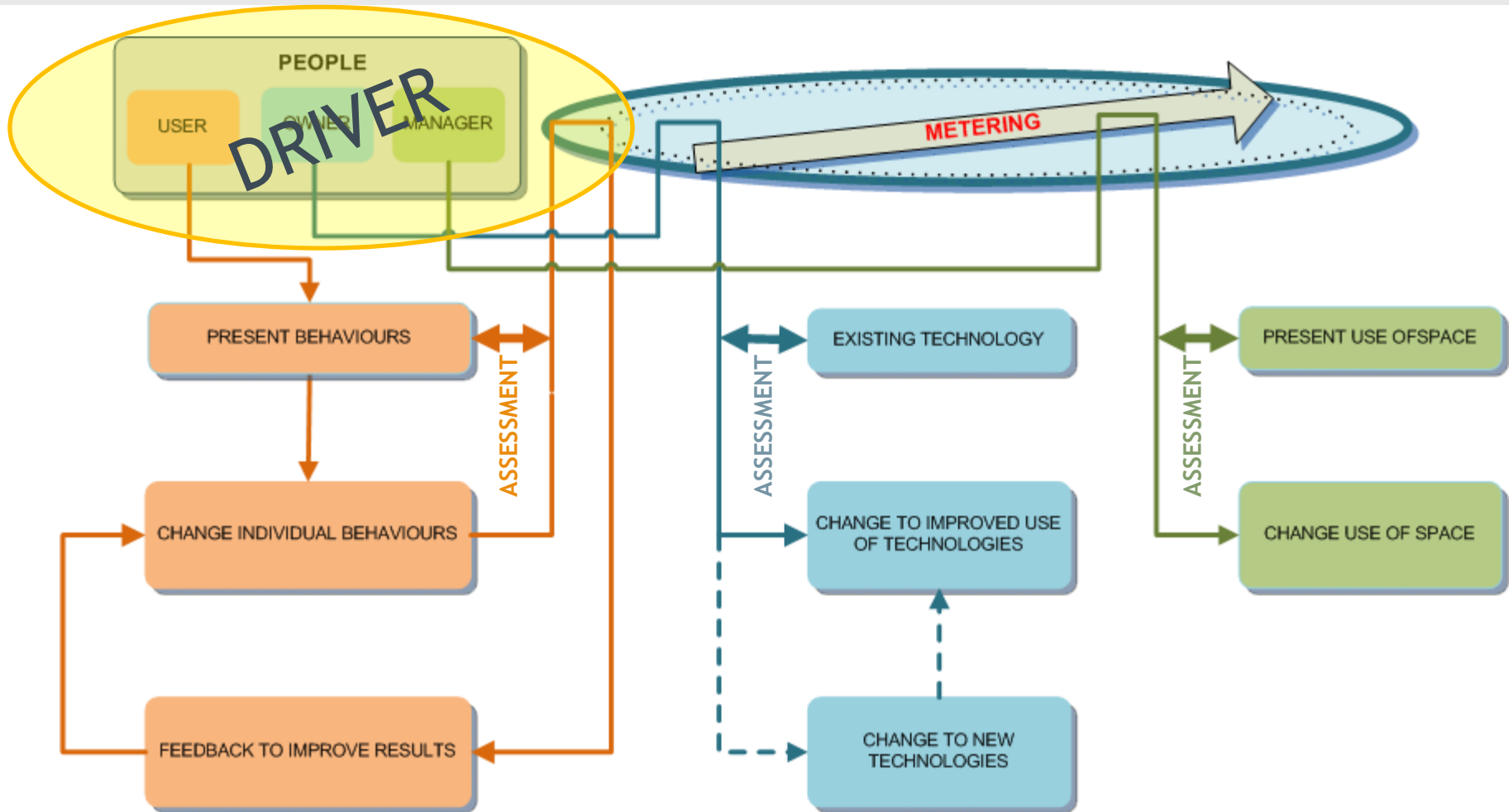
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<http://www.interreg-central.eu/Content.Node/TOGETHER.html>



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