

AIR-BRIDGE

Proyecto PROVA' T (2012 – 2013)

Development, validation and
Transfer to market of a prototype of
air-bridge for surface transport vehicles



Build air
Engineering + Architecture

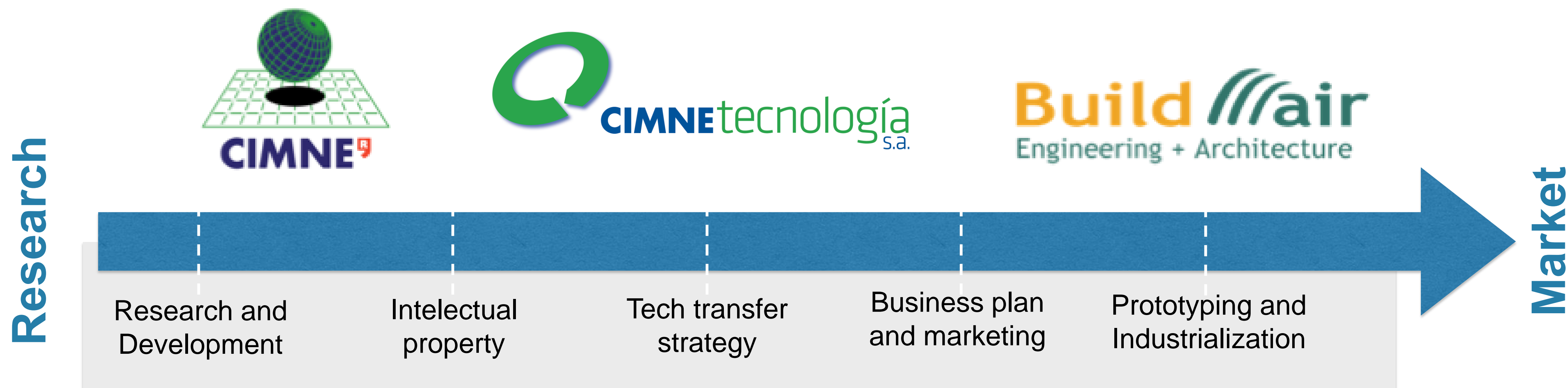


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From Research to the market



With the support of PROVA' T project:



Motivation



In the event of natural disasters, the speed, ease and efficiency of deployment of infrastructures are essential to reestablishment of communications.

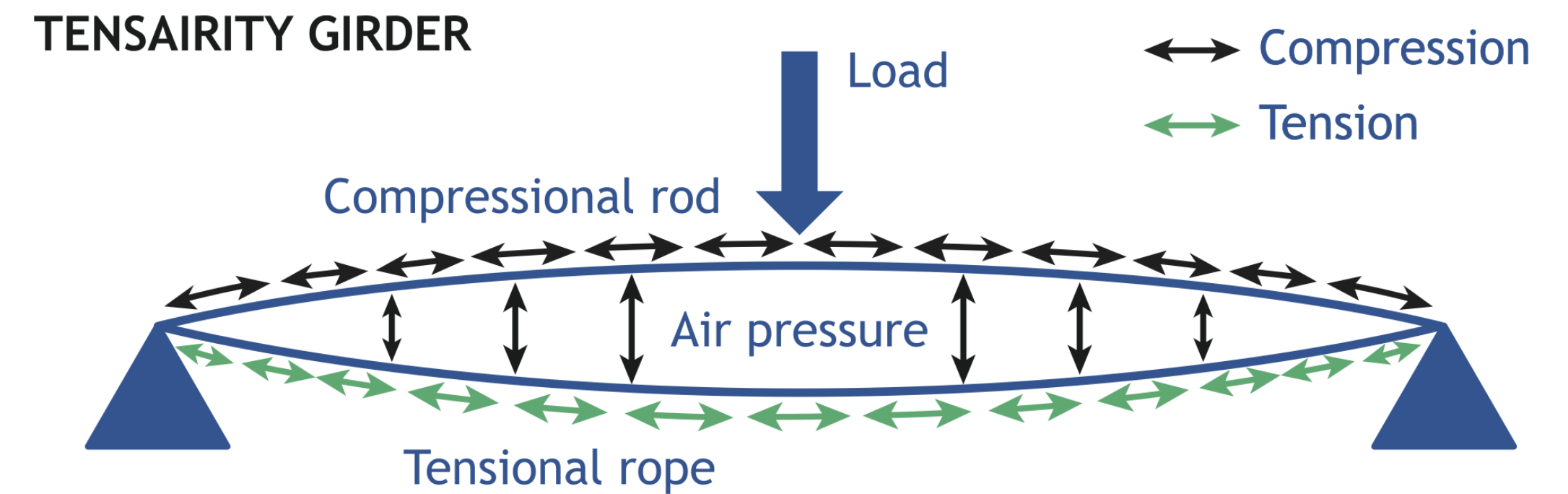
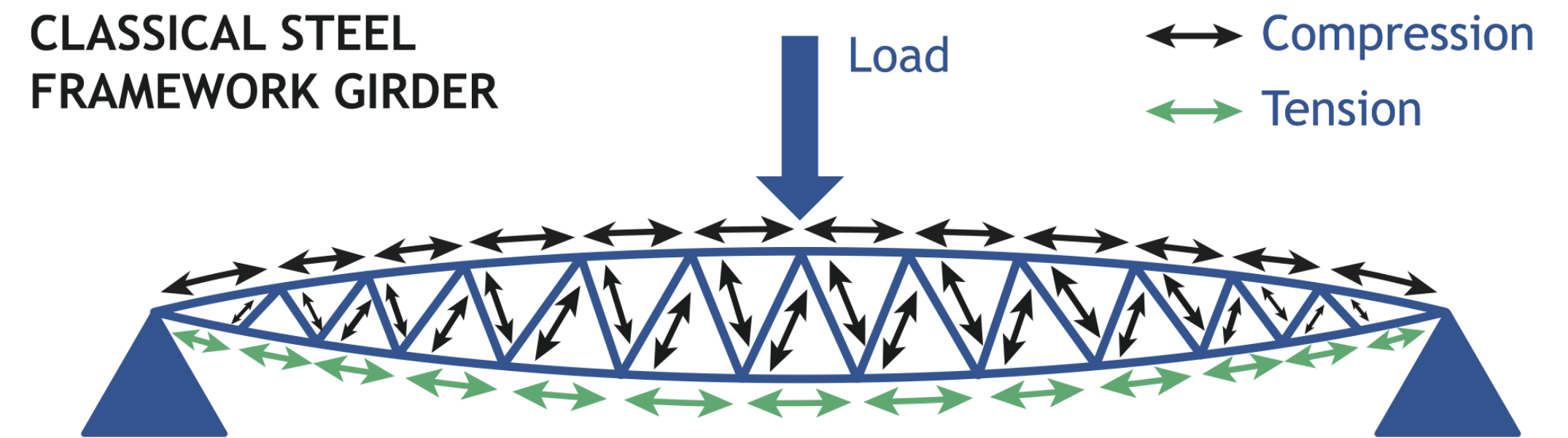
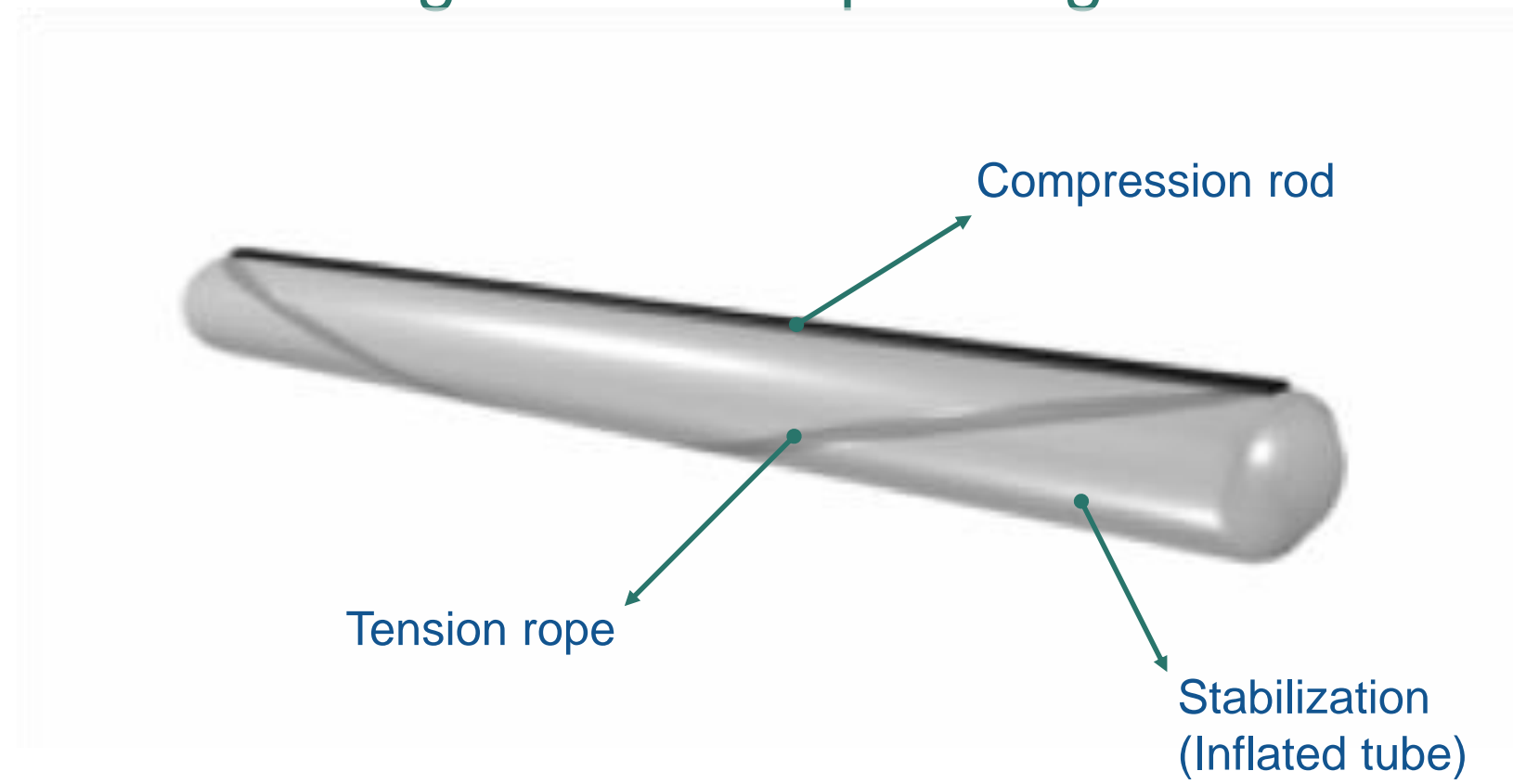
Objectives



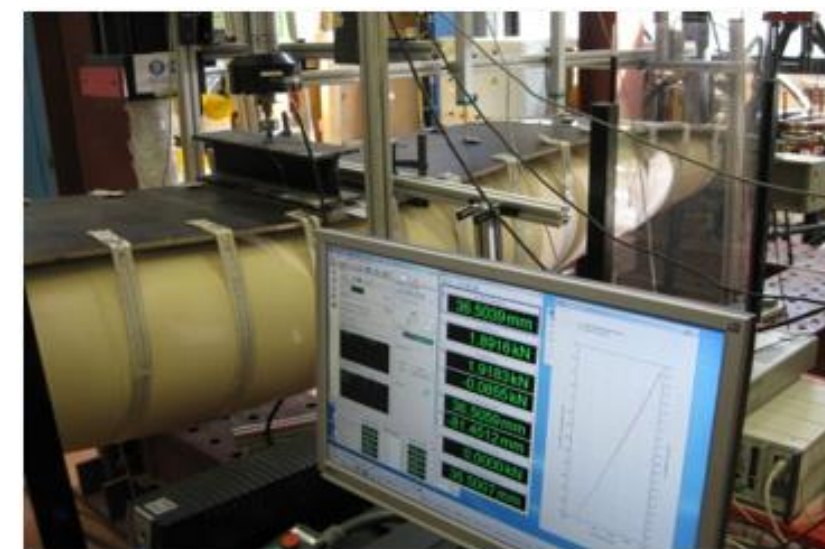
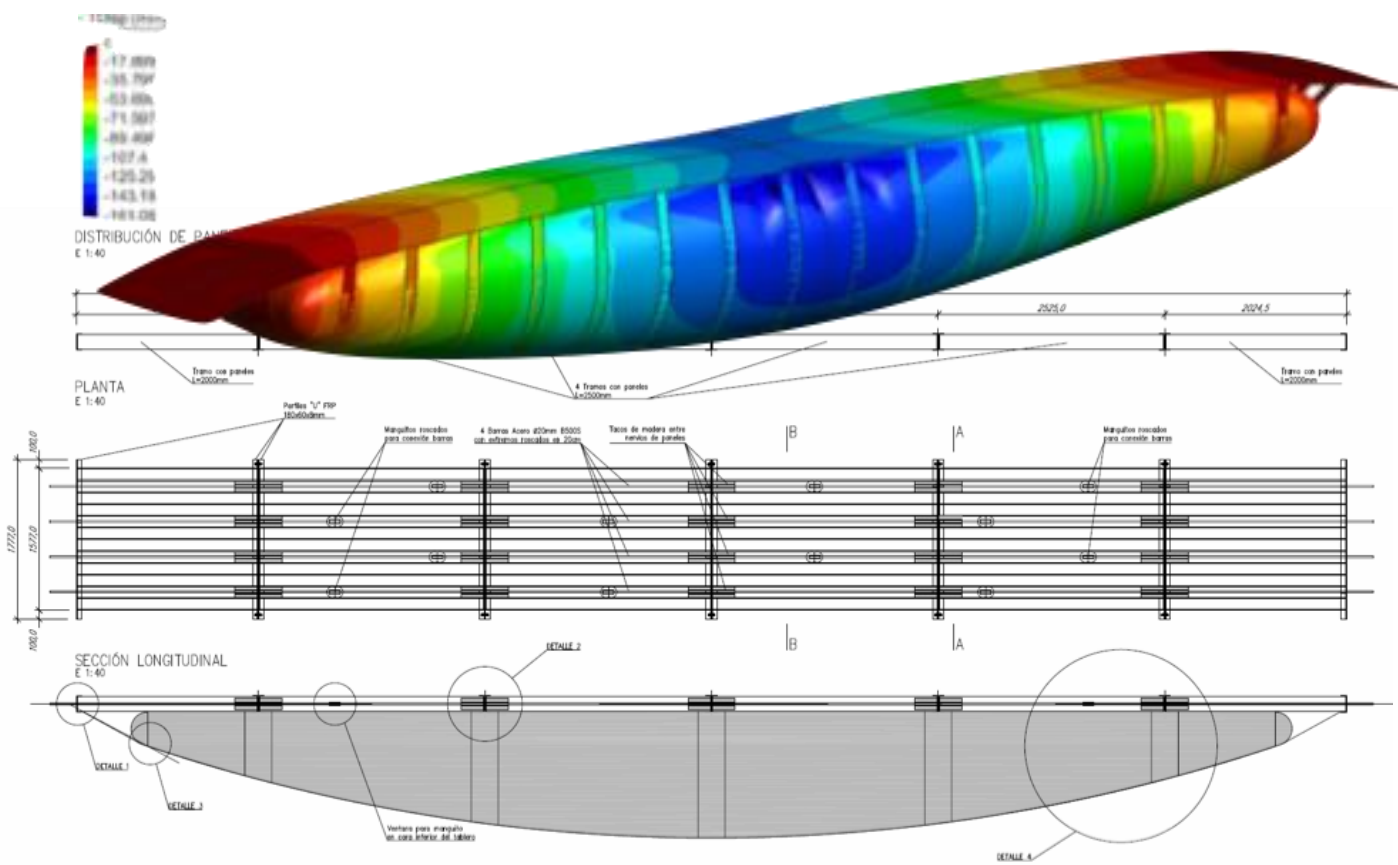
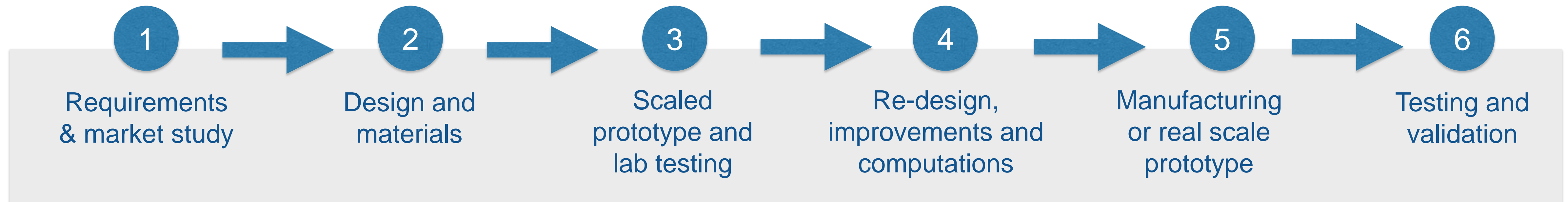
Facilitate the accessibility to
devastated areas for
humanitarian aids, evacuation
and military missions

Basis of the technology

Inflatable ultra-lightweight fast-deployable bridge for surface transport vehicles, which utilizes low-pressurized air-filled beams as the primary load-bearing structural spanning members



Technical evolution of the project

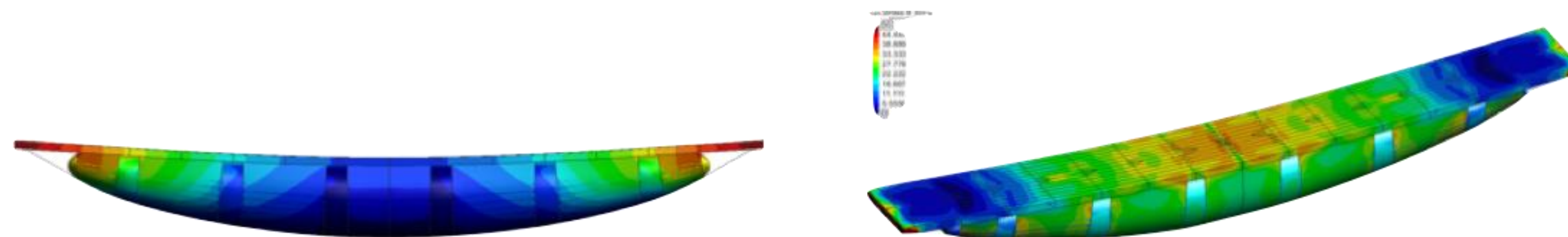


Full scale prototype bridge

Dimensions	Length 14 m Width 3,5 m	Similar to other alternatives
Inflation pressure	175 mbar	12 times less pressure than a vehicle wheel
Weight	5 tn	Up to 7 times lighter than alternatives
Weight/m2	100 kg/m ²	Up to 6 times lighter than alternatives
Vehicle load	30 tn	Ratio load/weight of 7 to 1
Storage volume	12 m ³	Up to 5 times smaller than alternatives
Deployed volume	78 m ³	Ratio deployed/storage volume of 6,5 to 1
Larger element	2,00 x 1,80 x 0,20 m ³	Weight 185 kg
Set-up effort	8 workers / 8 h	Up to 5 times smaller than alternatives
Use of heavy machinery	Not required	Always required in other alternatives



Testing and validation



Max. Load: 30 Tons.
Load / beam: 15 Tons.
weight: 5 Tons.
Rel. weight / load: 1 to 6
Max. deformation: 32cm
(less than 2,5% of span)

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Projecto PROVA' T (2012 – 2013)

DEMOSTRATION AT EL BORN OLD MARQUET BARCELONA, APRIL 28TH 2014

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VIDEO SHOWING THE DEMONSTRATION OF THE AIR BRIDGE AT THE BORN OLD MARKET BARCELONA, APRIL 28TH 2014



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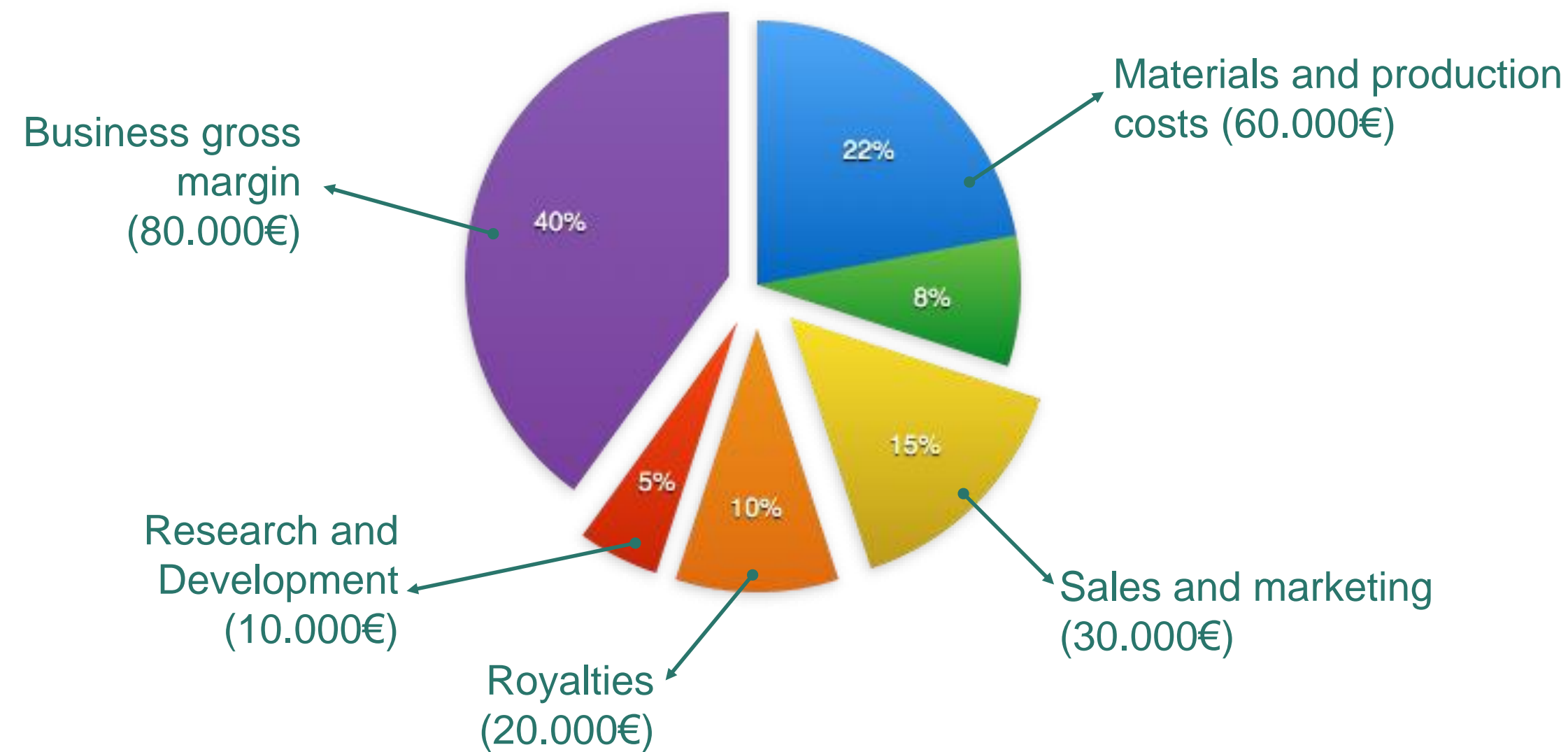


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Exploitation > Costs breakdown

Price of the bridge: 200K€

(similar cost than existing alternatives in the market)



Exploitation > Potential partners

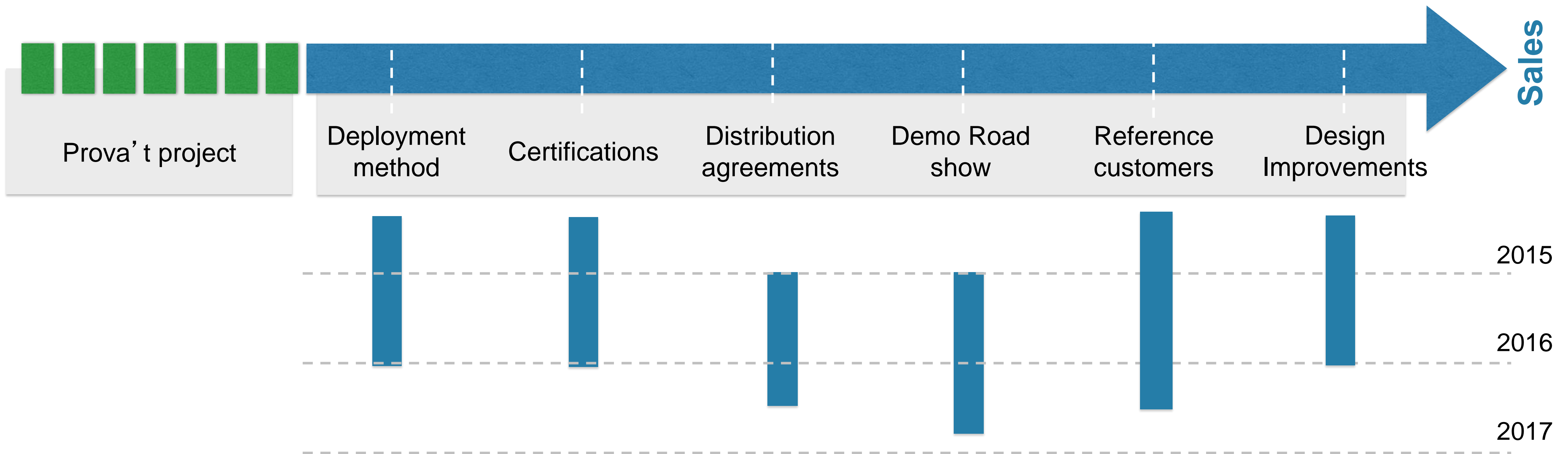


Meeting at West Point Military Academy (US Army). School of engineering. Rapid deployment bridges.



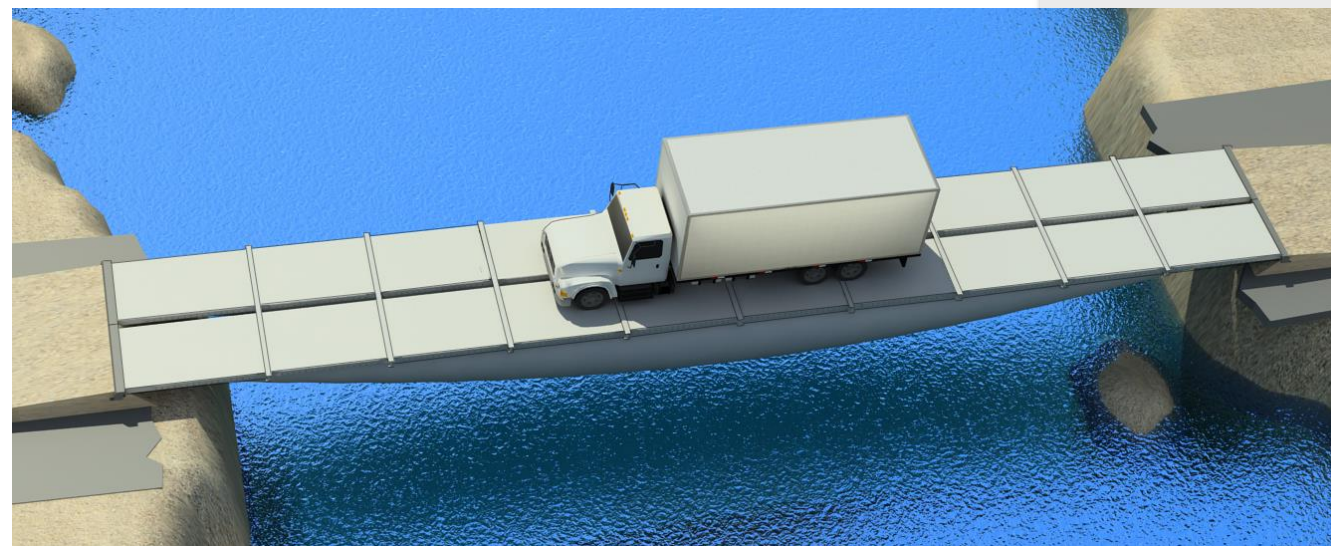
Disemination "informacions251" magazine (UPC)

Exploitation > Road to market



On-going activities

- 1) Extension of the span to 24m
- 2) Increasing stability
- 3) Re-design of deployment method
- 4) Increasing modularity capacity



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Thanks...!!!



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