

# Regional innovation metrics: the 2009 Regional Innovation Scoreboard:

**Hugo Hollanders**

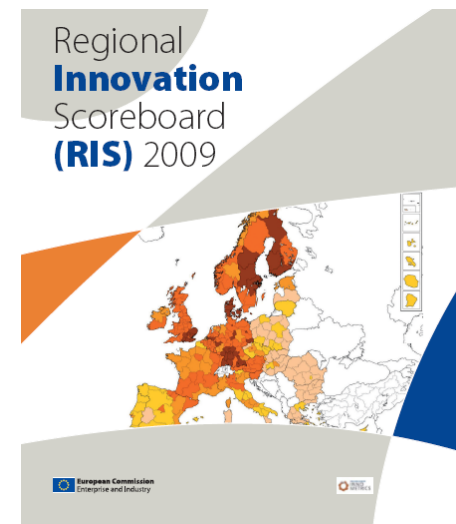
*Maastricht Economic and social Research and  
training centre on Innovation and Technology*



**Open Days – 8<sup>th</sup> European Week of Regions and Cities  
Workshop 05A09 on “Regional innovation synergies from EU measurement and analytical tools”,  
Brussels, 5 October 2010**

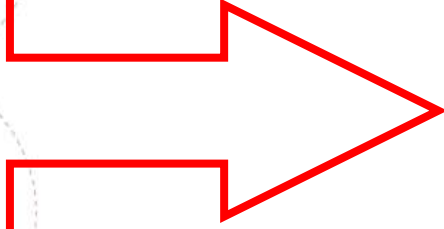
## Innovation benchmarking perspective

- The new EUROPE 2020 Strategy has singled out innovation as one of the key drivers that can get Europe out of the current crisis and also prepare its economy for the next decade
- The European Innovation Scoreboard has been the main tool developed at the initiative of the European Commission to provide a comparative assessment of the innovation performance of EU Member States ... and regions



## Available 'regional innovation metrics'

- R&D expenditure/personnel
- Patents
- Publications
- Exports
- Internet access/use
- University students/graduates



All proxies not  
directly  
measuring  
innovation!!

=> **Request to individual MS to deliver regional CIS data** for 2004 and 2006 for the same indicators used in the EIS:

- Non-R&D innovation expenditure
- Share of SMEs innovating in-house
- Share of SMEs collaborating with others
- Share of Product and/or process innovators
- Share of Marketing and/or organisational innovators
- Share of Resource efficiency innovators
- Share of New-to-market sales
- Share of New-to-firm sales

## Major problems in collecting CIS data at regional level

- **Misreporting of regional activities for multi-establishment enterprises**
  - As a partial solution all CIS indicators are for SMEs only. By focusing on SMEs the enterprise/workplace problem is minimized although not completely solved
- **Lack of regional stratum in the CIS sample design**
  - As a partial solution we have adopted a minimum regional sample size. Several smaller regions had to be merged with neighboring regions
- **Too small CIS sample size**
  - No solution

## Limited regional CIS data availability

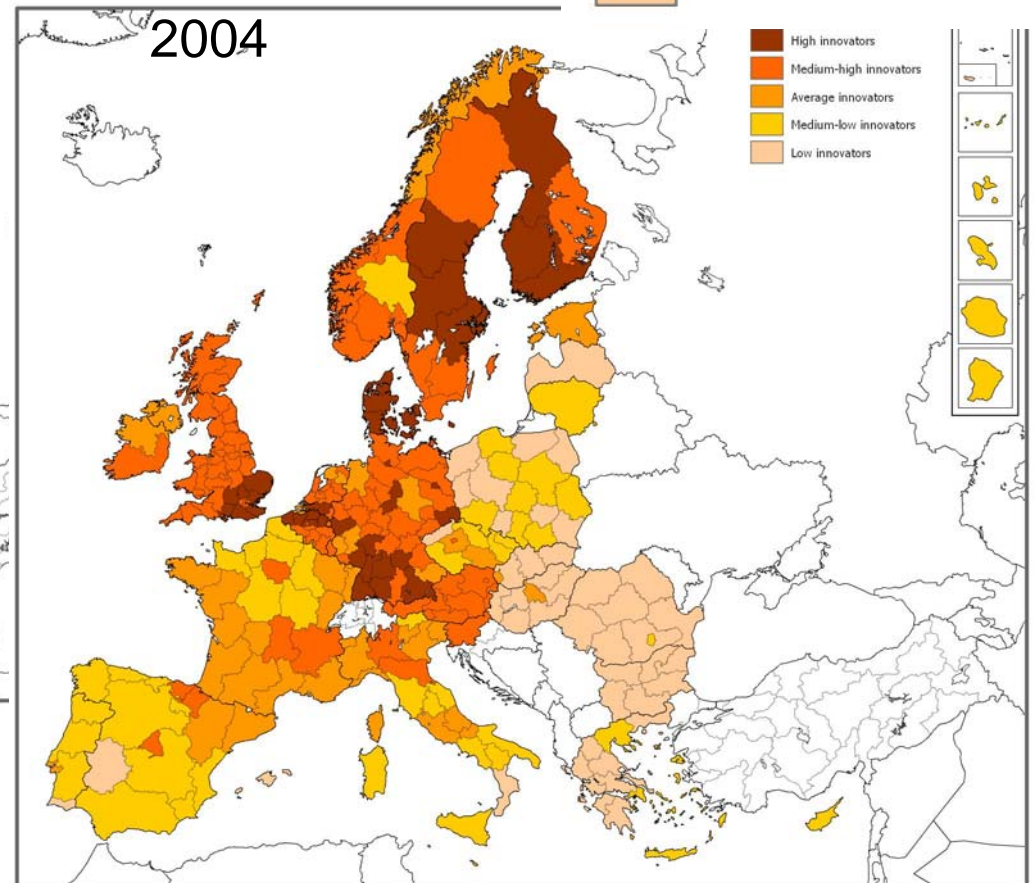
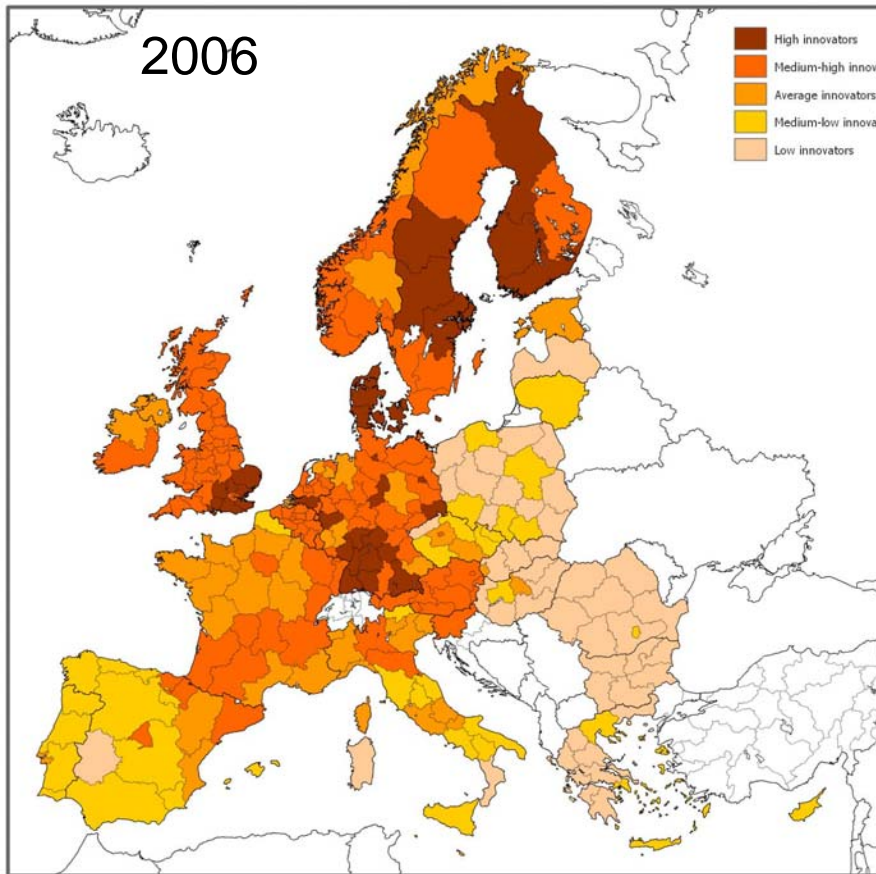
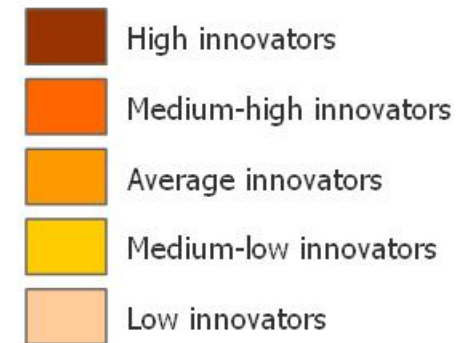
- No regional data for Germany, Ireland, Netherlands and Sweden
- No data on “expenditure” indicators for Austria (NUTS1), Finland, Italy and UK (NUTS1)
- Good data availability but for 1 year only: France (NUTS1), Greece and Hungary
- Good data availability for both years: Belgium (NUTS1), Bulgaria (NUTS1), Czech Republic, Norway, Poland, Portugal, Slovakia, Slovenia, Spain
- *Cyprus, Denmark, Estonia, Latvia, Lithuania, Luxembourg and Malta do not separate regions at the NUTS1 or NUTS2 level*

## Methodology

- Average innovation performance is measured using data for 16 indicators
- Imputation of missing data
- Normalisation of data
- Calculation of composite indicator capturing regional innovation performance

<b>ENABLERS</b>
• Tertiary education
• Life-long learning
• Public R&D expenditures
• Broadband access by firms
<b>FIRM ACTIVITIES</b>
• Business R&D expenditures
• Non-R&D innovation expenditures
• SMEs innovating in-house
• Innovative SMEs collaborating with others
• EPO patents
<b>OUTPUTS</b>
• Product/process innovators
• Marketing/organisational innovators
• Resource efficiency innovators
• Employment in medium-high-tech manufacturing
• Employment in knowledge-intensive services
• New-to-market sales
• New-to-firm sales

## Regional innovation performance



## There is considerable diversity in regional innovation performance

- All countries have regions at different levels of performance. This emphasizes the need for policies to reflect regional context and for better data to assess regional innovation performance

	High	Med-High	Average	Med-Low	Low		High	Med-High	Average	Med-Low	Low
<b>BE</b>		3				<b>AT</b>		3			
<b>BG</b>					2	<b>PL</b>				5	11
<b>CZ</b>		1	2	4	1	<b>PT</b>			1	4	1
<b>DE</b>	14	19	5			<b>RO</b>				1	7
<b>IE</b>		1	1			<b>SI</b>		1	1		
<b>GR</b>				3	2	<b>SK</b>			1		3
<b>ES</b>		4	2	11	2	<b>FI</b>	3	1			
<b>FR</b>		4	3	2		<b>SE</b>	4	4			
<b>IT</b>		2	7	8	2	<b>UK</b>	2	9	1		
<b>HU</b>			1	1	5	<b>NO</b>		5	2		
<b>NL</b>	1	8	3								



## The most innovative regions are typically located in the most innovative countries

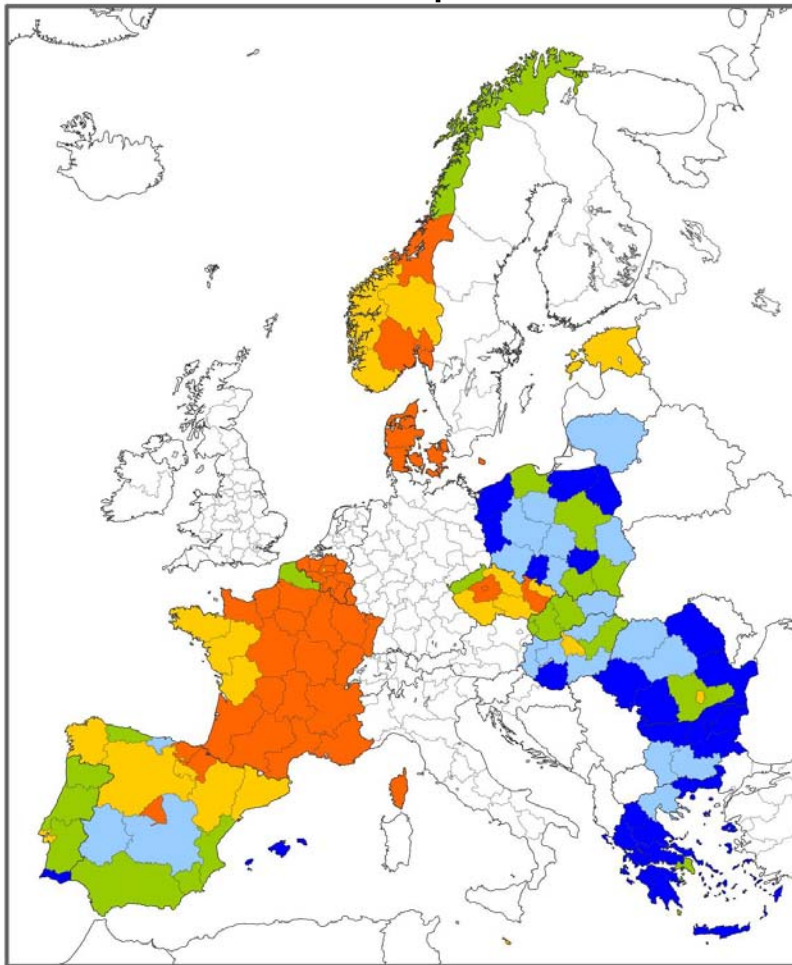
- Nearly all the "high innovators" regions are in the group of "Innovation Leaders" identified in the EIS
- The results also show regions performing (much) "better" than their country:
  - Praha (CZ), Pais Vasco, Comunidad Foral de Navarra, Comunidad de Madrid and Cataluña (ES), Lombardia and Emilia-Romagna (IT), Zahodna Slovenija (SI) are all medium-high innovating regions from moderate innovators and catching up countries
  - The capital regions in Hungary and Slovakia show an innovation performance at the EU average but are located in catching up countries whose overall innovation performance is well below average

## Regional performance stable over time

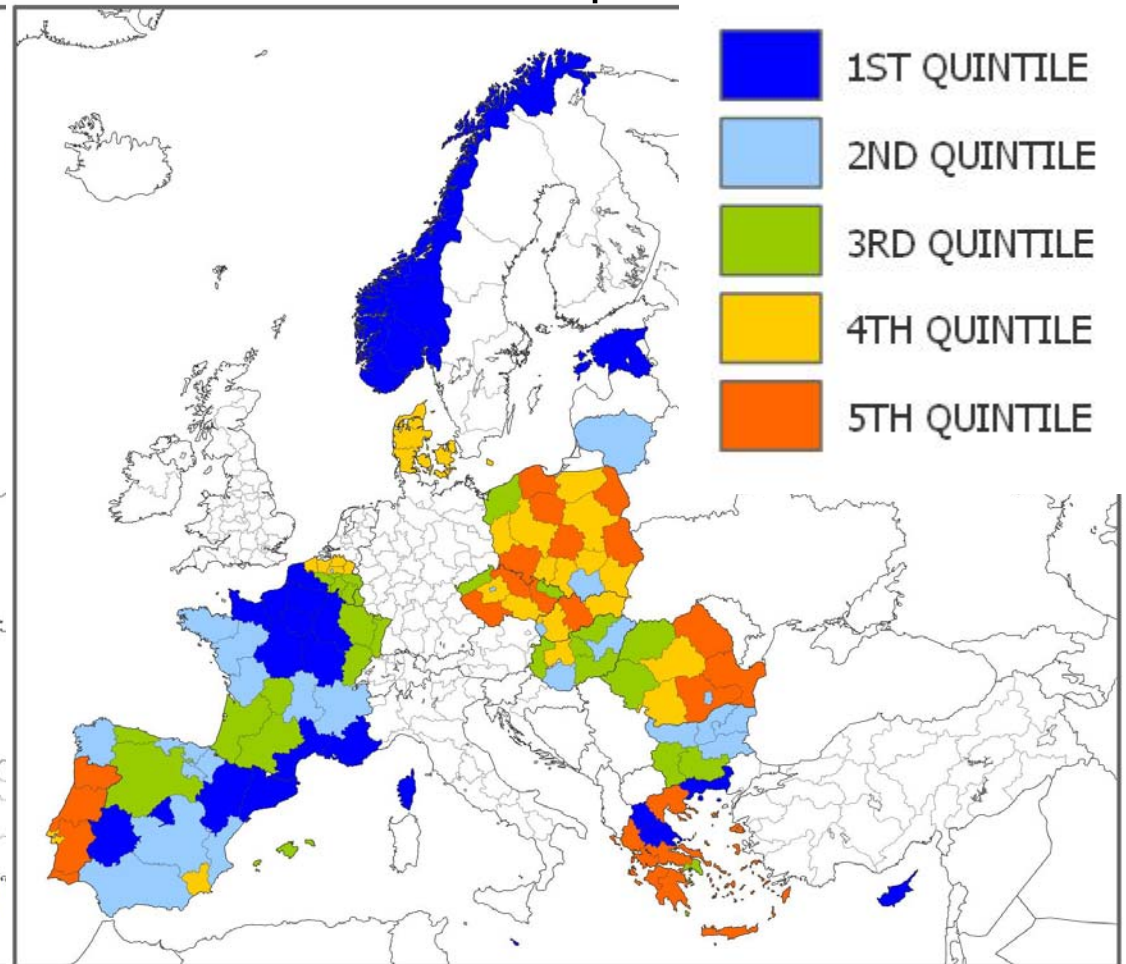
- The pattern of innovation is stable between 2004 and 2006, with only a few changes in group membership:
  - Most of these changes are positive:
    - Cataluña, Comunidad Valenciana, Illes Balears, and Ceuta (Spain), Bassin Parisien, Est and Sud-Ouest (France), Unterfranken (Germany), Közép-Dunántúl (Hungary), Algarve (Portugal) and Hedmark og Oppland (Norway)

## Importance of Non-R&D innovation for regions in catching-up countries

Business R&D expenditure



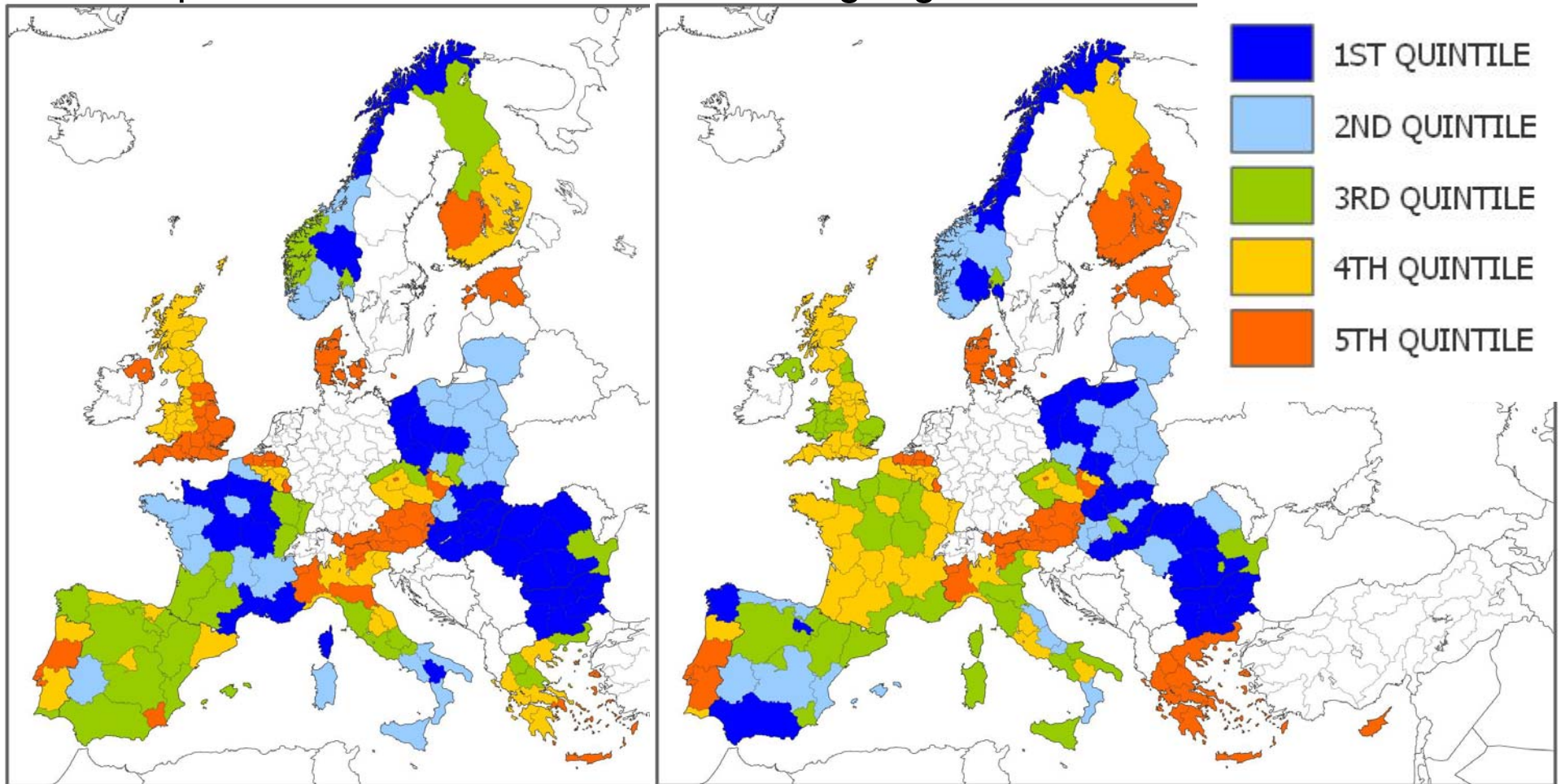
Non-R&D innovation expenditure



## “Non-technological” innovation relatively more prevalent in France, Greece, Hungary and Romania

Product/process innovators

Marketing/organisational innovators



## Conclusions

- For the first time regional CIS data have been used for measuring regional innovation performance
- For several Member States data could not be made available. A full regional performance analysis could thus only be done by imputing all missing data
- The analysis shows that there are 5 regional groups of innovation performance, from low performers to high performers
  - The regional groups match that of the EIS at country level
  - Group membership has been stable between 2004 and 2006
  - Most countries show diversity between their regions; this shows the value of measuring innovation performance at regional level
- While the 2009 RIS marks a major step forward, there are still major gaps in the availability of regional innovation indicators

- Thank you!
- For questions or comments, please contact:

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INNO Metrics: [www.proinno-europe.eu/metrics](http://www.proinno-europe.eu/metrics)

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