



- The 5 to 10 most relevant base technologies within the field of micro- and nano electronics will be selected.
- For this list of cross-cutting technologies aroadmap will be determined.





#### **The Electronics Value-Chain**



A chip

Applications





# Value Chain building in DSP Valley





# **Employment in the Value Chain in Flanders**





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What is happening next?

- Building a dedicated value chain in the selected and promising base technology domain of GalliumNitride (GaN on Si)
- Building a cross-KET application domain for Health: micro/nano-electronics + biotech
   DSP Valley + FlandersBio



### Power: identified as a focus area



2 Base technologies related to power: Energy & Wide bandgap

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Value chain building for power electronics based on GaN technology

#### GaN advantages:

- Higher switching frequency possible
- Higher junction temperature



- Smaller and lighter
  power modules
- Power conversion
  at higher efficiency



# **Power Electronics Application Fields**





- 1. Value chain creation in Flanders for key enabling technologies is strongly supported by the Flemish government.
- 2. A strong cluster can provide the right arguments for inward investment decisions.
- Power Electronics is one of the key focus areas for the Flemish MNE industry. (according to the Flemish MNE roadmap)
- 4. GaN is a promising technology for power electronics. All market studies forecast a big market potential, of which the growth should start soon.
- Flanders has several players that could be part of a GaN cluster.







# Potential Stakeholders GaN Cluster (2)

Newtec



- Tessenderlo
- DC current sensors for power invertors
- Integrated DC motor controllers



Satellite receivers

Research for sustainable energy and intelligent energy systems

Programmable power modules



- Sint Truiden
- EV drive train





KUL research on power electronics



- Added value analysis in value chain
- VUB research on EV's and Hybrids
- <u>http://mobi.vub.ac.be/</u>



• Drivers for LED video walls

Heverlee

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### Inverto N.V.

- Gent
- Electronics design
- Lighting electronics

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Power convertors





#### In wheel motor for cars



#### **Electric taxiing**







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- **1.** Individual discussion with potential stakeholders
- 2. Meeting / workshop where we invite all potential stakeholders
  - a. Presentation on own activities related to power electronics. Potential relation to GaN
  - b. Explain position in value chain.
  - c. Brainstorm on ideas for pilot projects
- **3.** Defining pilot projects, lighthouse projects
  - a. Collecting ideas in workshop
  - **b.** Organise brokerage event
- **4.** Actions, activities to strengthen the GaN cluster
  - a. Create promotion material
  - b. Promotion of GaN cluster on events abroad (e.g. Semicon, power electronics related, ..;)
- 5. Consortia forming (see windmill examples)



