The GaN Foundry Model: A GameChanger for the Next Wave of Innovation

Patrick Minton
Director of Business Development
X-FAB Dresden

Bodo's Wide Bandgap Event 2025

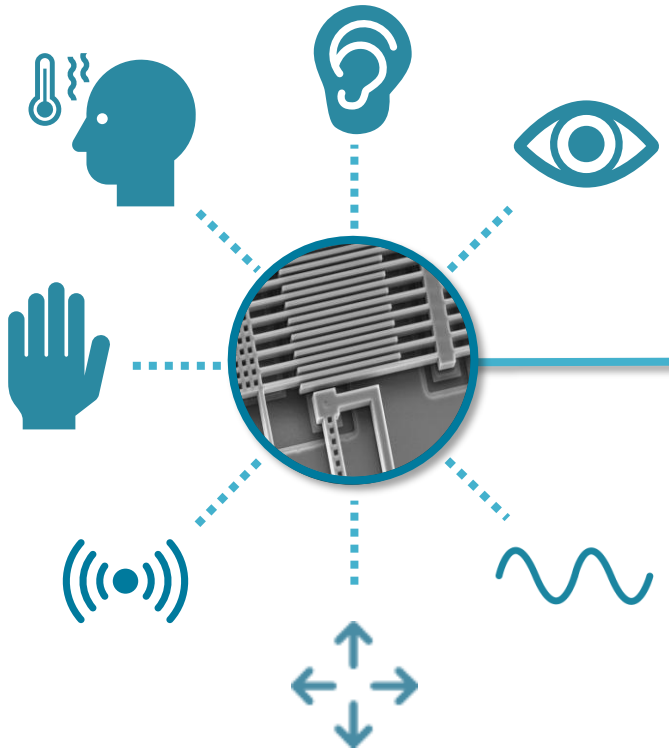
Making WBG Designs Happen

The X-FAB GaN Foundry Model:

A 31 Ga Gallium GameCha 7 N Nitrogen ger for the Next Wave of Innovation

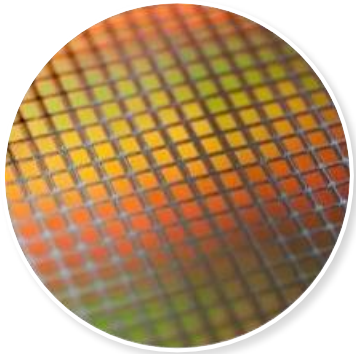
Patrick Minton

We build the bridge between the Analog and Digital worlds



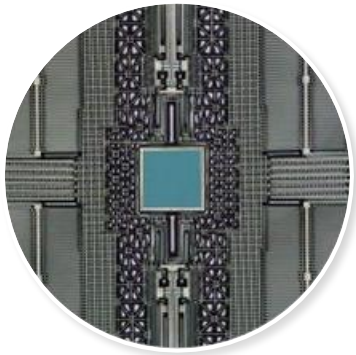
- Autonomous driving
- Health monitoring
- Robotics
- Seamless connection

X-FAB Technology Portfolio



Smart CMOS & SOI

15 process families with over 450 options

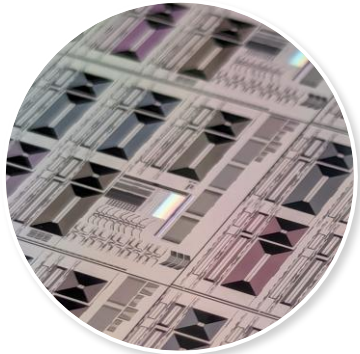


MEMS

MEMS with or without integrated CMOS

Heterogeneous integration

3D integration and wafer level package solutions



Photonics

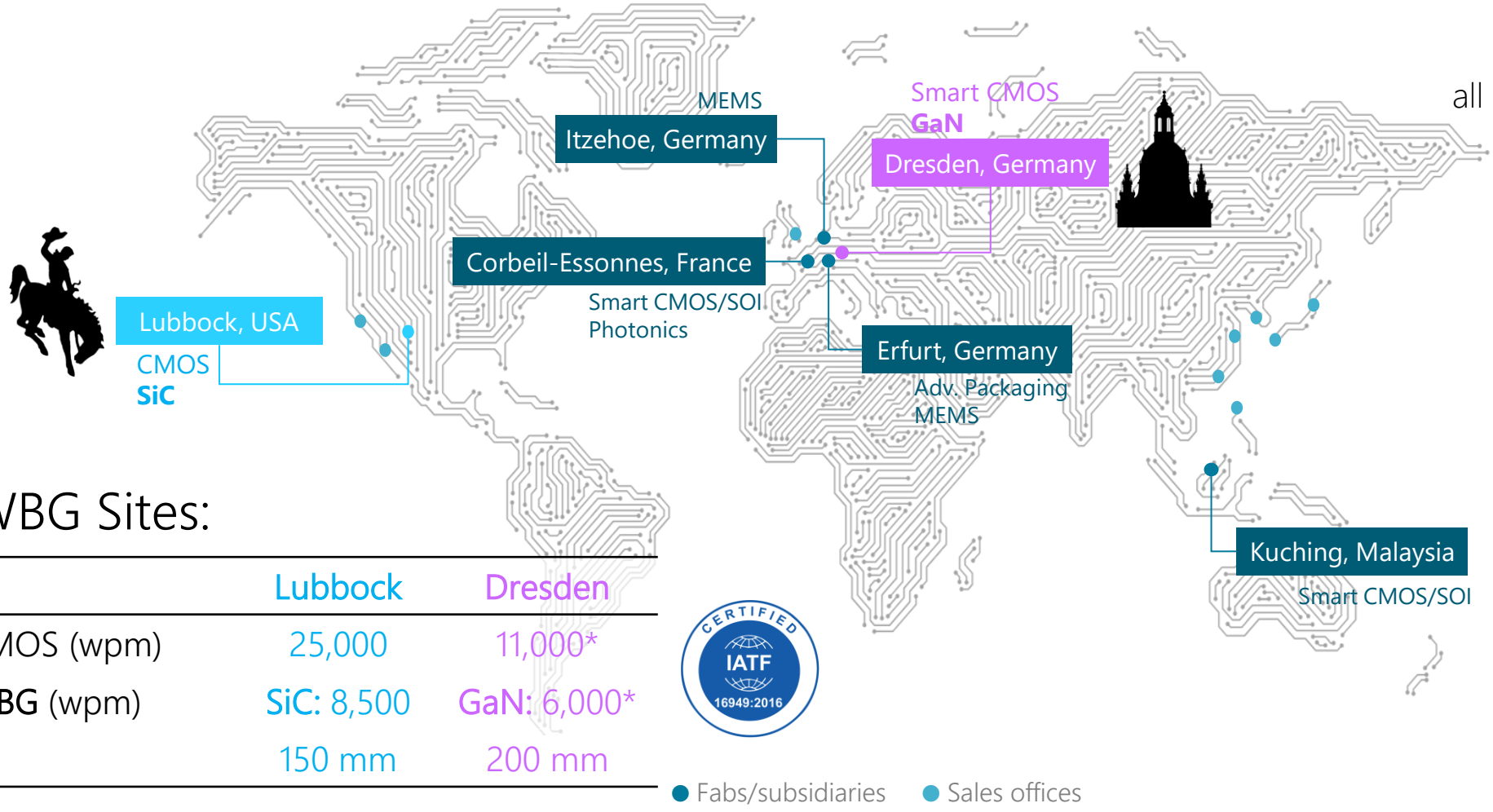
SiN and SOI-based silicon photonics

WBG

6-inch SiC – Texas

8-inch GaN – Dresden

The X-FAB Group at a glance



X-FAB WBG Sites:

	Lubbock	Dresden
Capacity CMOS (wpm)	25,000	11,000*
Capacity **WBG** (wpm)	SiC: 8,500	GaN: 6,000*
Wafer size	150 mm	200 mm

flexibility between CMOS and GaN

6
manufacturing sites,
all automotive qualified

$816m
revenue in 2024

400+
customers in
4 key markets

4,500
employees
representing
45 nationalities

What **GaN Innovators** are asking for…

"Can you adapt your metallization to lower my Ron?"

"Can we tape in a HEMT at a lower voltage class?"

"Can I adjust the threshold voltage?"

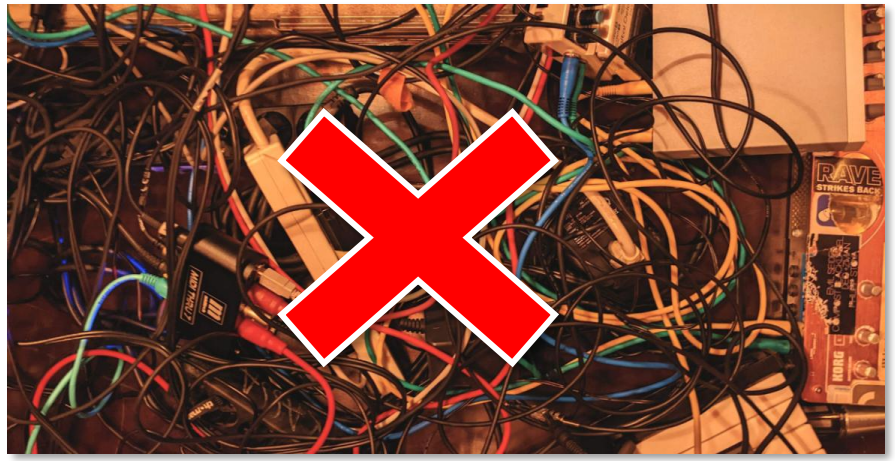
"Can I combine the HEMT with a Gate Driver in one package? Can X-FAB provide both?"

"Can we try a different substrate?"

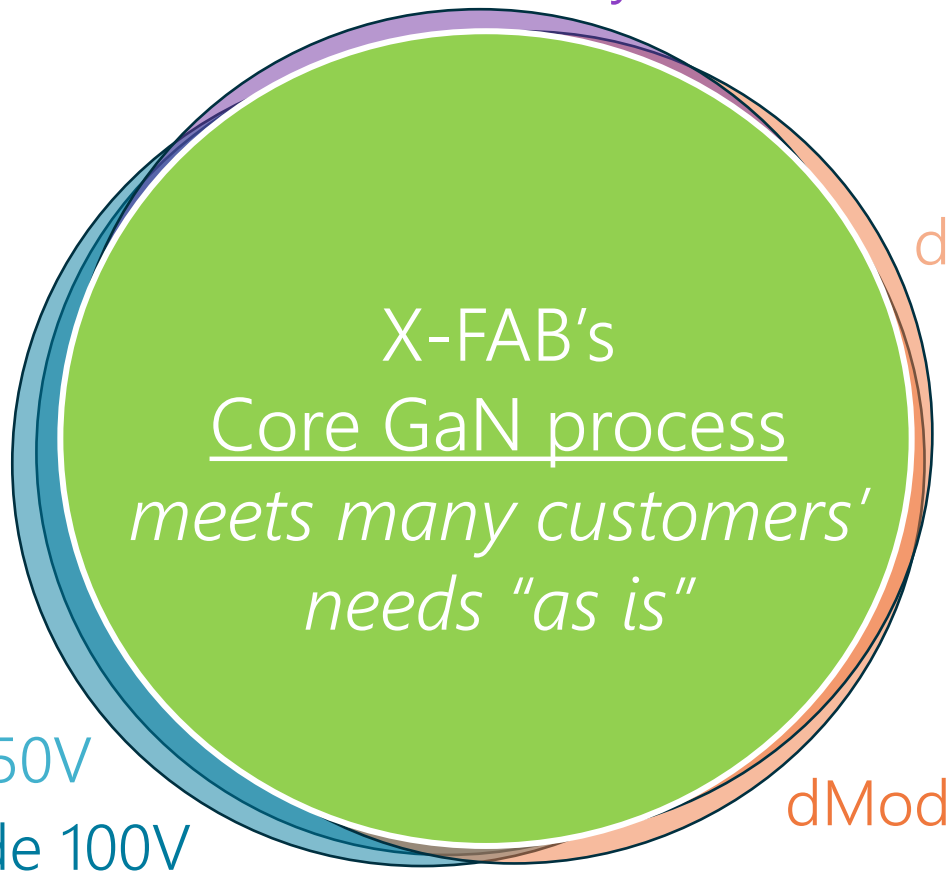
"Can we co-develop a vertical device?"

"Can we have **access** to **customizable** GaN without owning a fab?"

Built for Access, Built for Customization



Kabelsalat = Cable Salad



Status
prototyping runs
engineering runs
customization

31 GameChaNger 7
Gallium Nitrogen

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650V-750V HEMT
100V-200V HEMT
Schottky Diode

eMode

1200V+ HEMT
650V-750V HEMT
Schottky Diode
Sensor

dMode

Vertical

Front-side
Back-side

YES vGaN
Wide Band Gap Power at Silicon Cost

2021-2024

xfab
GaN
Foundry

Tri-gate HEMT
Tri-anode diode
Multi-channel devices

Advanced Architecture

Monolithic Integration

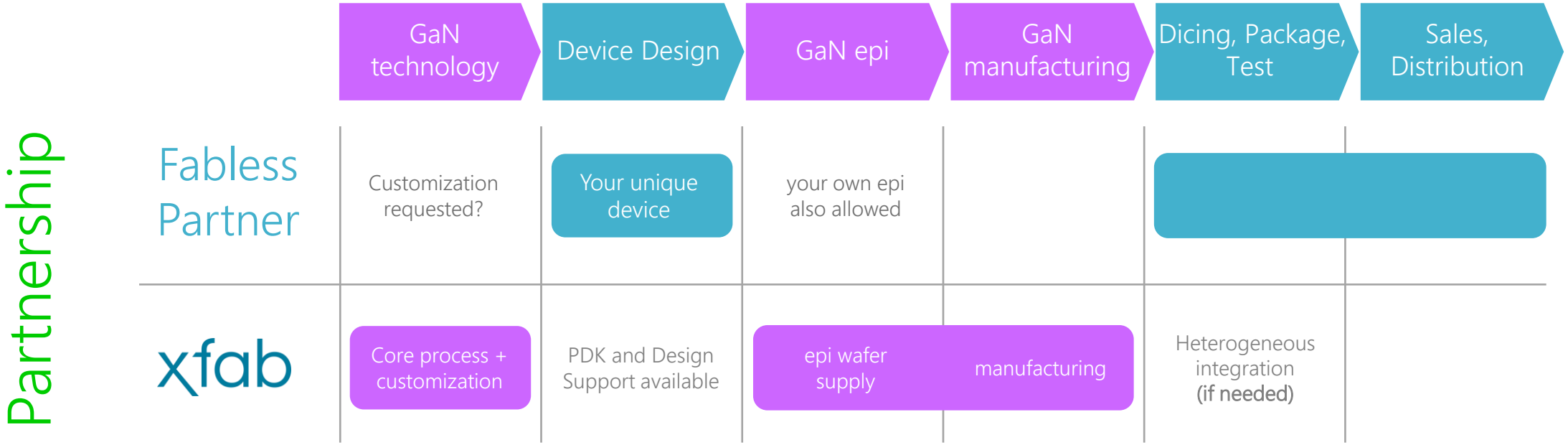
Capacitors
Resistors
Diodes
LV transistors (e/d)

Design your:
- Level shifter
- Gate Driver
- Protection circuitry (UVLO)

Customize

NextGen Substrates
Your ideas!
Vth tuning
Metallization
additional features?
epi
field plate adjustment

Not Just a Foundry – A Partner in Innovation



X-FAB unlocks access to unique GaN designs, beyond "off-the-shelf"

X-FAB Technology Portfolio

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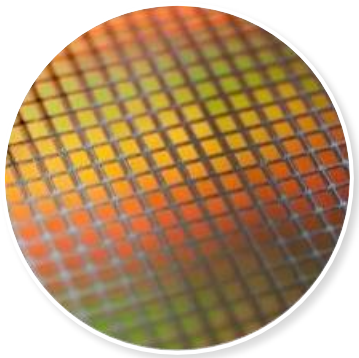
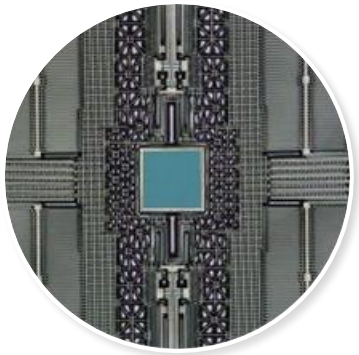


CMOS & SOI

15 process families
with over 450 options



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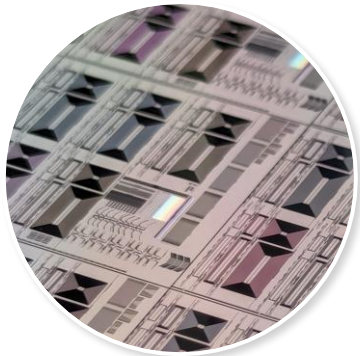

Photonics

SiN and SOI-based
silicon photonics

WBG

6-inch SiC – Texas
8-inch GaN – Dresden

Gate Driver
(180nm SOI)

System-in-Package
(µTP and CuRDL)

GaN HEMT

One Stop Shop: CMOS + GaN HEMT

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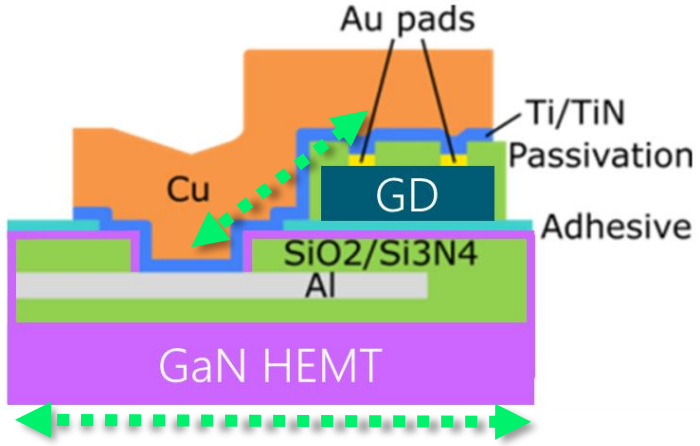
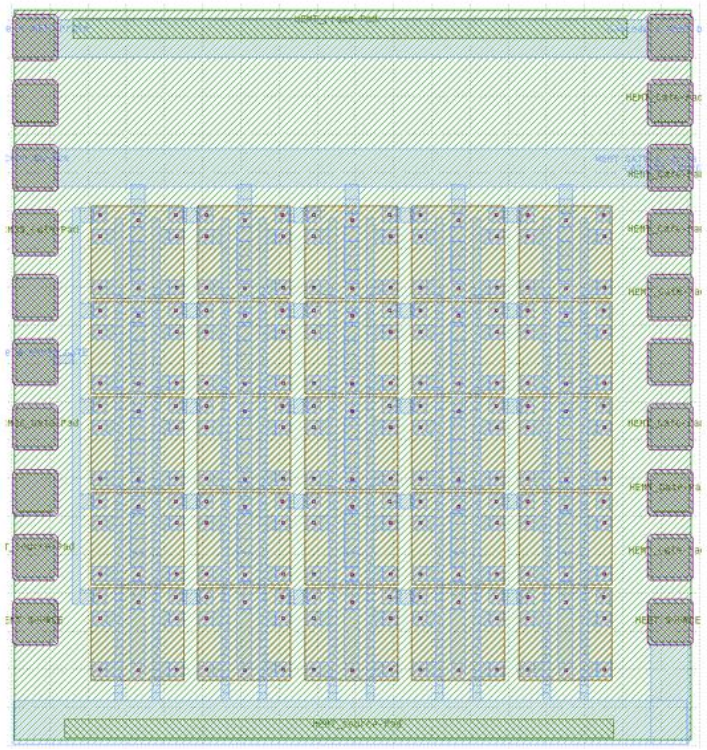
TOP DOWN

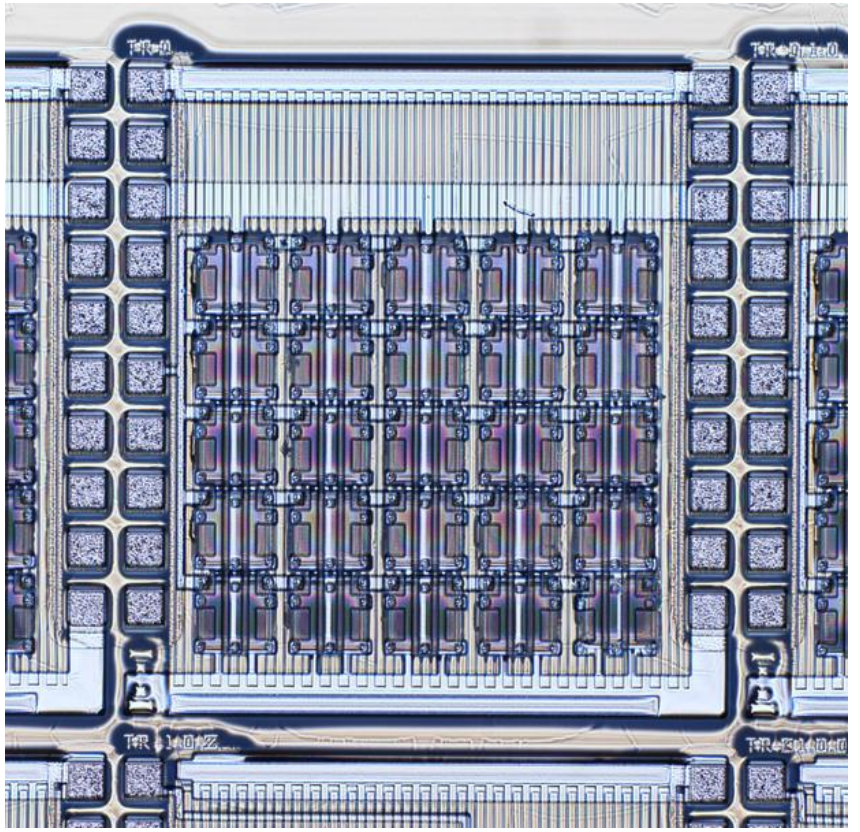
CROSS SECTION



LAYOUT



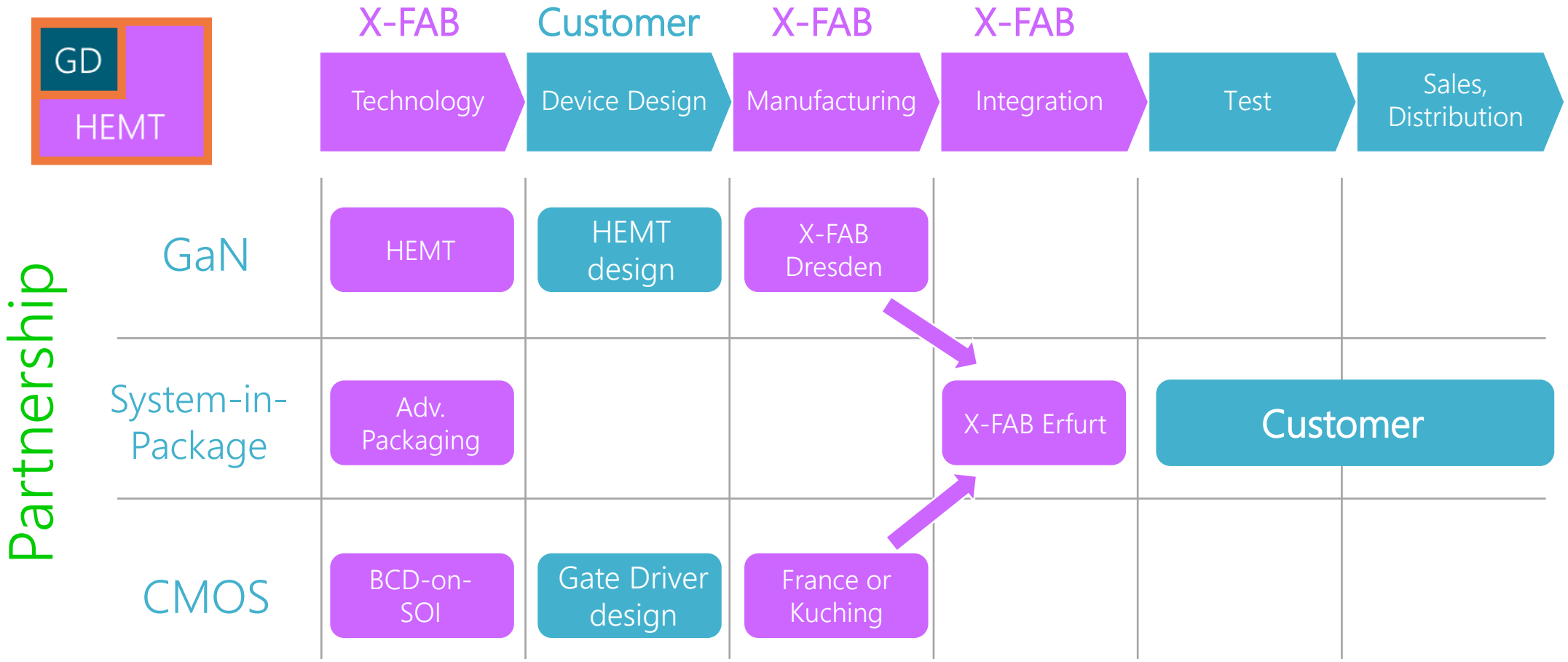
RESULT



Cascode Example: dMode GaN HEMT + 5x5 20V CMOS transistor array

X-FAB System-in-Package:
- Short connection distance
- Tiny footprint

Not Just a Foundry – A Partner in Innovation



Simplify your life with a One-Stop-Shop

Let's Build the Next Wave Together

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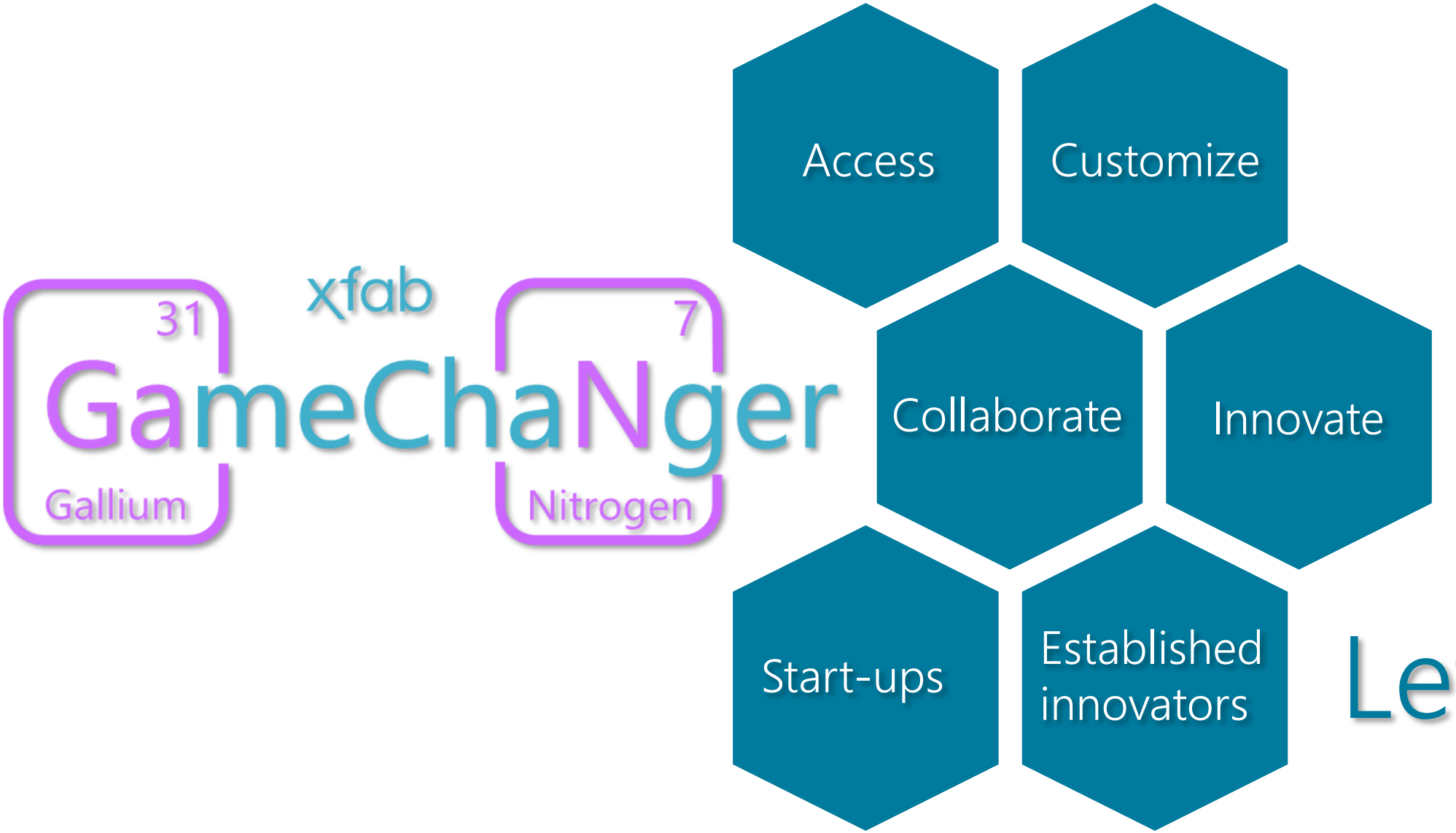

Let's go!

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Thank you.
31
GameChaNger
Gallium
7
Nitrogen
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