



mec

GROWING (UP) TOGETHER

FEBRUARY 5, 2026

CONFIDENTIAL



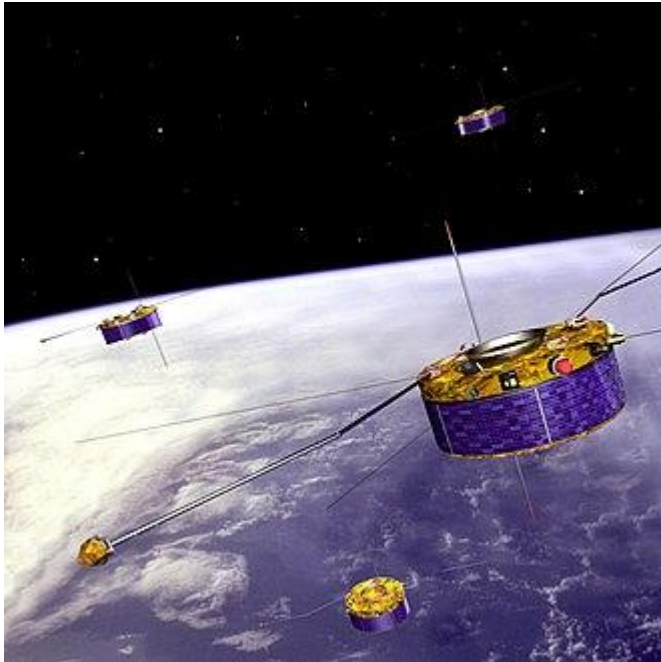
GAISLER
25 YEARS
IN SPACE

2001  2026

THE NINETIES

DESIGNING COOL STUFF... (EXAMPLES)

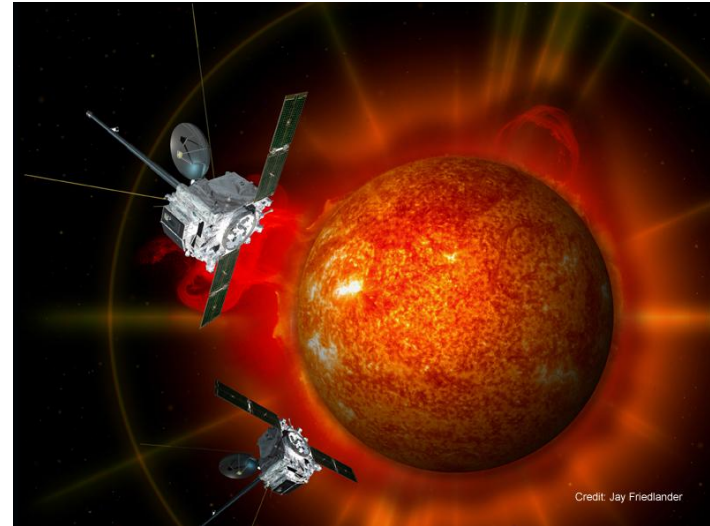
CLUSTER: Rumba, Tango, Samba & Salsa
Imec IRIS camera Controller



Will burn up in the atmosphere in 2026

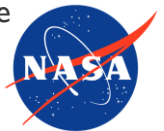


STEREO – Solar Electron Proton Telescope (SEPT)
PDFE



Credit: Jay Friedlander

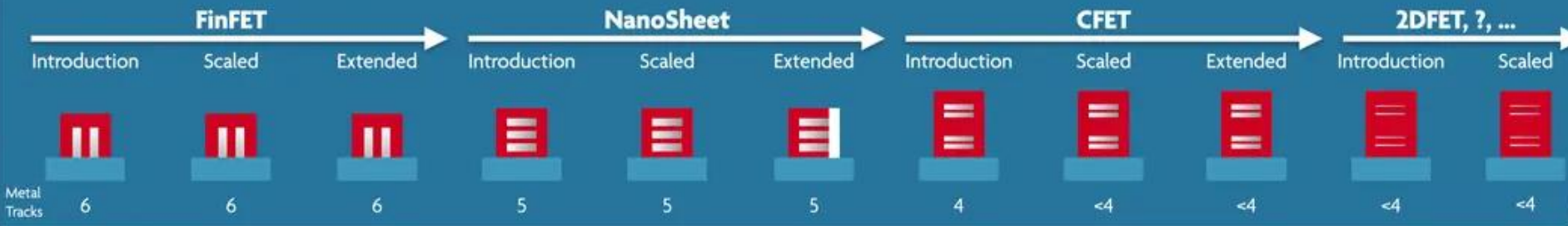
Still active



Options extending the roadmap



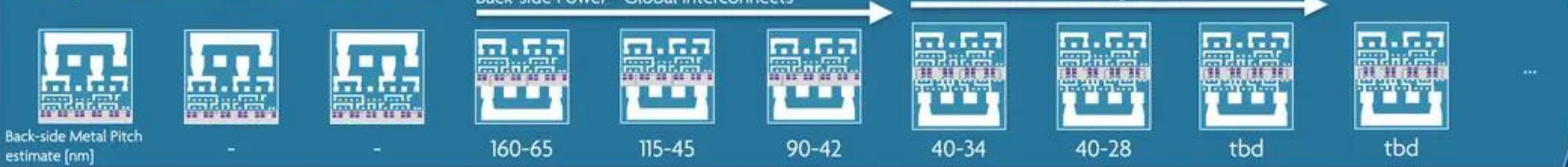
Device and material innovations



Continued dimensional scaling



Chip Interconnect Architecture



MPW EUROCHIP

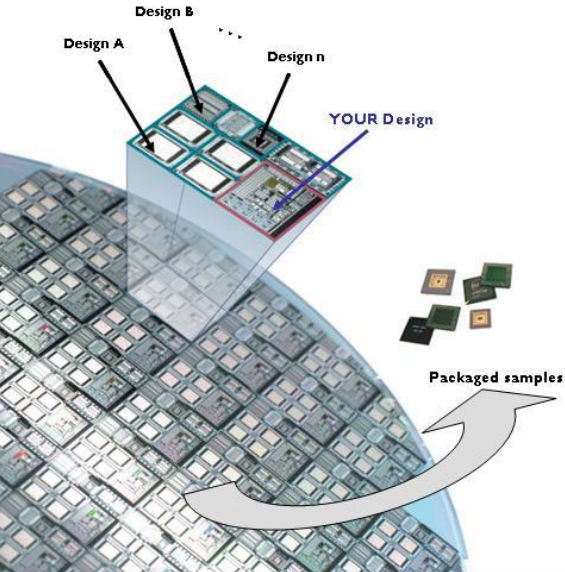
1986 1989-1995



1995 - now

Layout service
MPW's for Industry

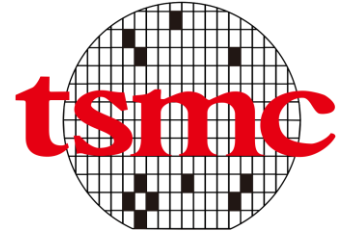
1998 - now



UMC

2000

MPW's with LEON IP inside



2007

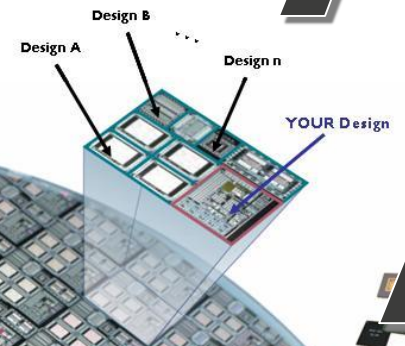


MPW EUROCHIP EURO PRACTICE
IC SERVICE

Layout service
MPW's for Industry

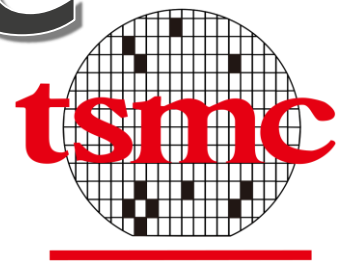
1986 1989 1995 1995 - now 1998 - now

Affordable



ACCESS

UMC



2007

MPW's with LEON IP inside

Packaged samples



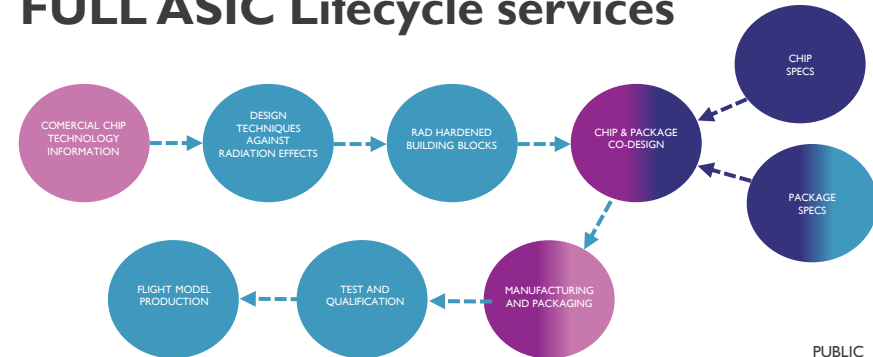
DARE: DESIGN AGAINST RADIATION EFFECTS

MANY ESA & CUSTOMER PROJECTS

- Building blocks and services for the creation of radiation-hardened chips
- 1998: Proof of concept project
- 2000: Started on UMC .18 solution
- 2006: Start of addition of analog building blocks
- Many test chips
- Port to UMC imager technology
- DARE 90 UMC
- DARE 180 XFAB XH
- DARE65 TSMC
- DARE22 GF
- DARE 180 XFAB XS (recent)
- Many test chips
- Many prototype and product tapeouts
- First launch **2017**... many more after that
- Many millions of hours of flight heritage in many missions



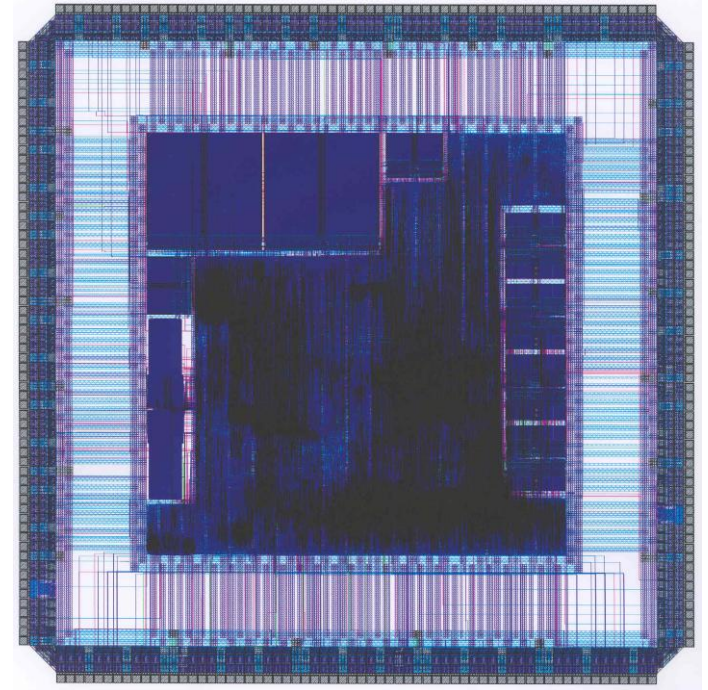
FULL ASIC Lifecycle services



LEONUMC (GR704)

TAPEOUT 2009

- DARE180U
 - Building blocks
 - Digital layout
 - Manufacturing/Packaging via subco
- Learnings about
 - Procurement flow
 - Qualification
 - Testing
- Laid the foundation for Gaisler's future supply chain
 - Package: Kyocera Technologies
 - Packaging: HCM
 - Test: SERMA
 - Radiation test: UCL cyclotron
- Laid the foundation for TAS' Digital Programmable Controller (DPC)



GR718B SPACEWIRE ROUTER

QUALIFIED:2017

- DARE180U
- Backbone for many spacecraft data networks
- On European Preferred Parts List



GR716A: MIXED-SIGNAL MICROCONTROLLER

QUALIFIED: 2018

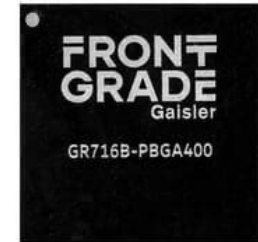
- DARE180U
- Swiss army knife of space grade microcontrollers
- LEON3FT SPARC V8
- All standard interfaces



GR716B: MIXED-SIGNAL MICROCONTROLLER

AVAILABLE FROM: 2025

- DARE180U
- Evolution of GR716A
 - Higher performance
 - Advanced mixed-signal capabilities
- 3 packaging versions

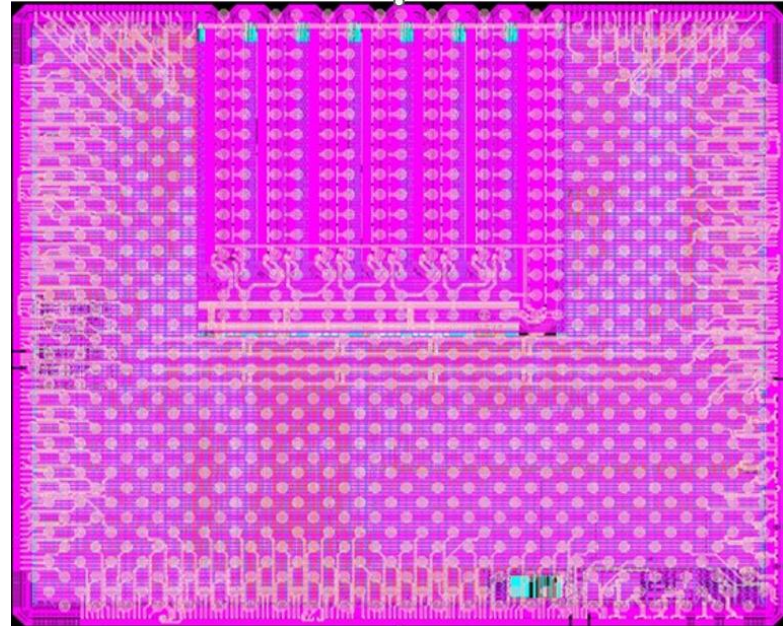


D65D DEMONSTRATOR

TAPEOUT IN 2024

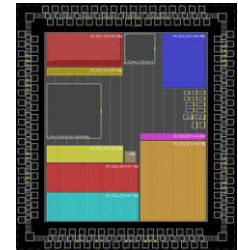
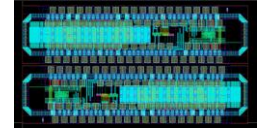
- DARE65T
- Flip-chip

- LEON5FT
- Dual-precision IEEE-754 compatible FPU
- MMU
- Fault-tolerant L2 cache
- DDR2/3 SDRAM memory controller
 - Reed-Solomon EDAC
- SpaceWire router
- High-speed SpaceFibre link
- 1 Gbps Ethernet,
- Various low speed interfaces



THE FUTURE : DARE22G & DARE7FF

- H2020 EFESOS project (Dec 2019)
 - Basis for creation of DARE22G platform
- ESA INFINIT Project (Jan 2024) – SEE/TID Radiation test on 7nm
 - Analog test chip: measurement results on RADECS 2025 poster
 - Digital test chip: finalizing measurement data analysis
- ESA UDSM (since Dec 2025)
 - Foundation of DARE22G platform
 - Initiation of DARE7FF platform



THANK YOU FOR THE FRUITFUL COLLABORATION



- At times challenging, close collaboration
 - Pleasant, respectful & open
- Learned from each other
 - Application (incl. SW) company vs HW centric service company
- Thanks for
 - Support for support AMICSA 2018 organization
 - Trial design for advanced node flow definition

FUNDING IS THE KEY

- Funding office objectives: mostly application focused
- Funding enabling technologies is laying the basis



European
Union



Rymdstyrelsen
Swedish National Space Agency

*Thank
you!*



<https://www.imeciclink.com/en/asic-services/asic-design/dare>



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embracing a better life