



Connectivity for
Automotive Light & Vision

Inova Semiconductors
Q4.2020



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Inova Semiconductors GmbH.



Private fabless semiconductor company

Headquarter: Munich, Germany

Founded 1999

Mission:

Development, manufacturing and worldwide sales of innovative Gigabit link solutions for serial data communication and smart LED solutions for the Automotive Market.

CONNECTIVITY FOR AUTOMOTIVE LIGHT & VISION

Business Area.

Brands

APIX – Automotive Pixel Link

APIX[®] APIX[®]2 APIX[®]3



ISELED – the digital LED

ISELED

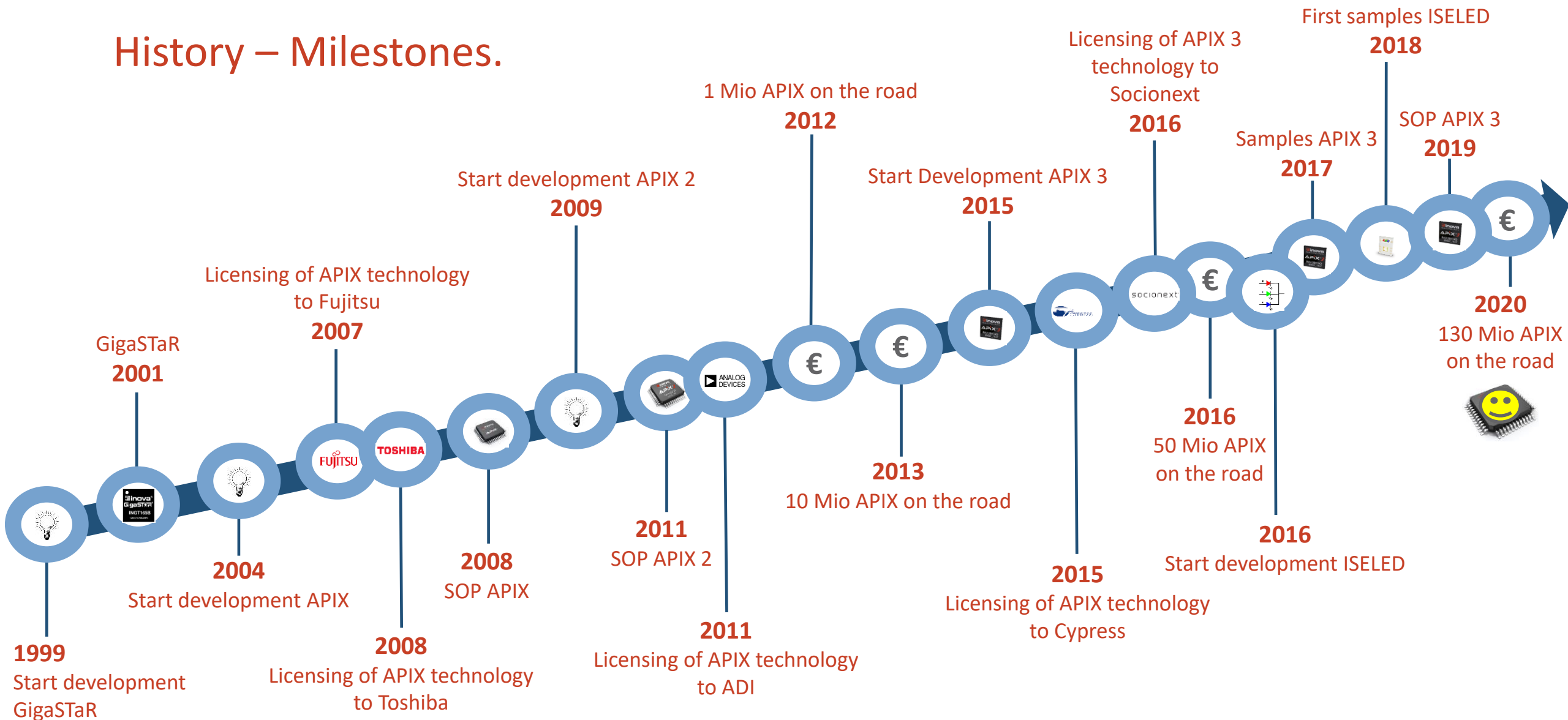


Market Establishment



➡ >130 Mio APIX on the road

History – Milestones.



Global Presence.

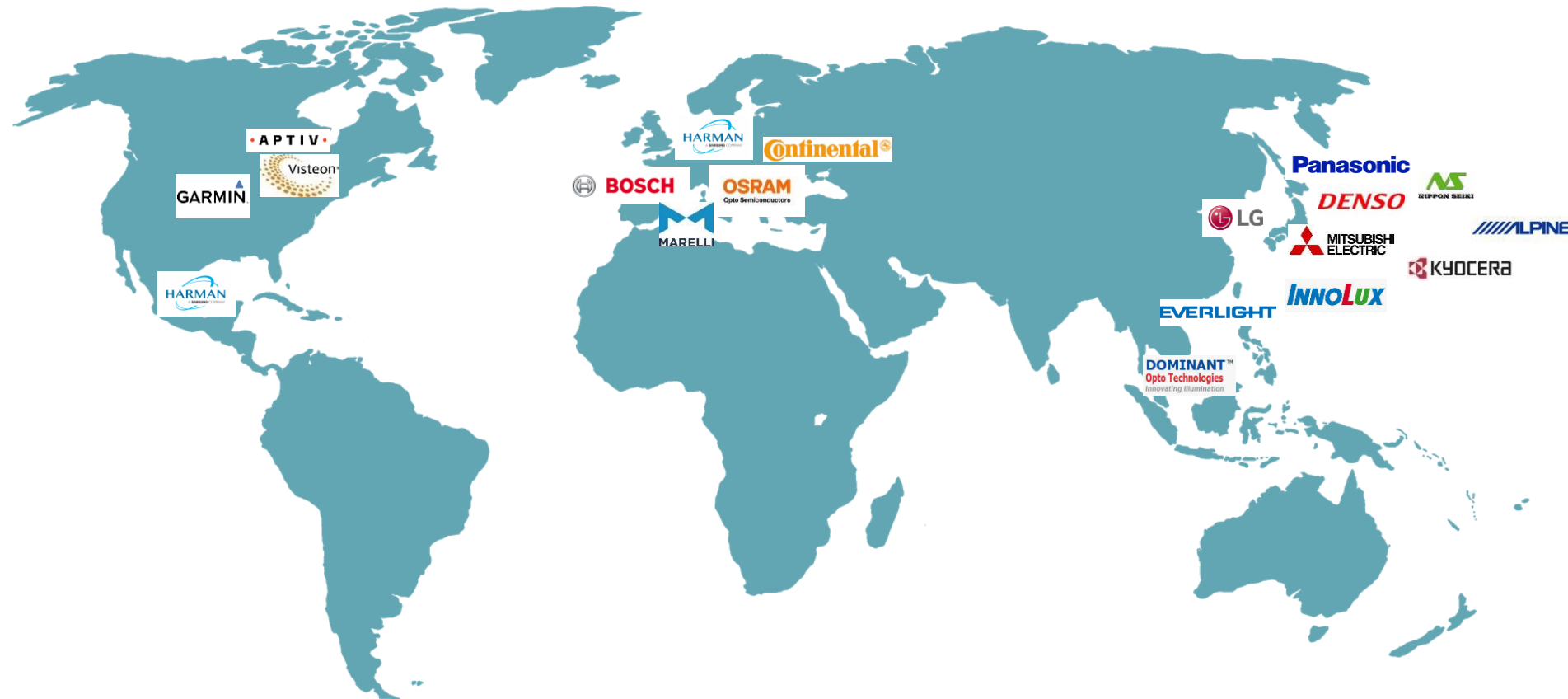
HAWYANG
semiconductor corp

SIT
TECHNOLOGY INC.

AVNET

inova
Semiconductors

Hitachi High-Tech



APIX®

ISELED®

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Business Segments and Goals.

APIX®

Displays
Cockpit / Rear Seat



Provide Most **Reliable** Digital
Gigabit **Multichannel SerDes** Solutions to the
Automotive Market

APIX®

Central Instrumentation Displays

Cluster Displays

Passenger Displays

Console Displays

Rear Seat Entertainment

Displays for Camera Monitor Systems

HVAC Displays

APIX®

ISELED®

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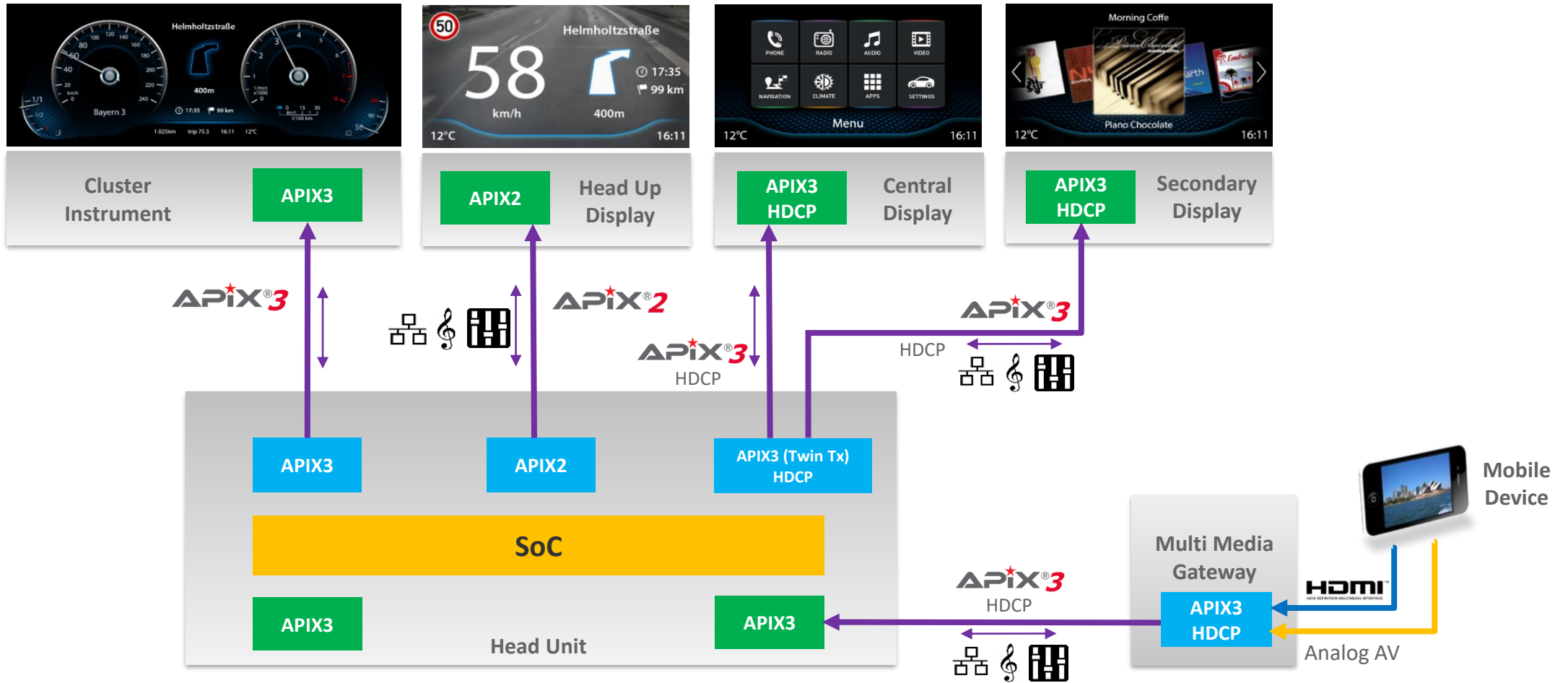
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APIX – Automotive Pixel Link.



2008	2012	2018
1 Gbps	3 Gbps	12 Gbps
Video only	Multichannel HD Video Content Protection Ethernet Digital Audio	Multichannel UHD Video Next Generation Video IF Visually lossless Compression Content Protection Ethernet Data Communication Diagnostics Safety Digital Audio

APIX – Example Application



APIX - Ecosystem



molex®



Rosenberger®

LEONI

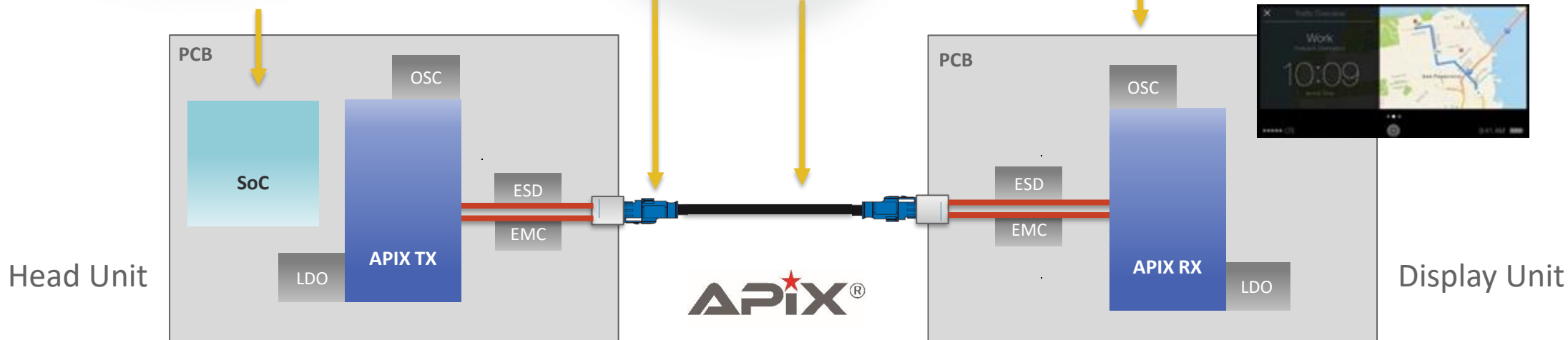
Licensing

socionext™

TOSHIBA



Display Panel Manufacturers



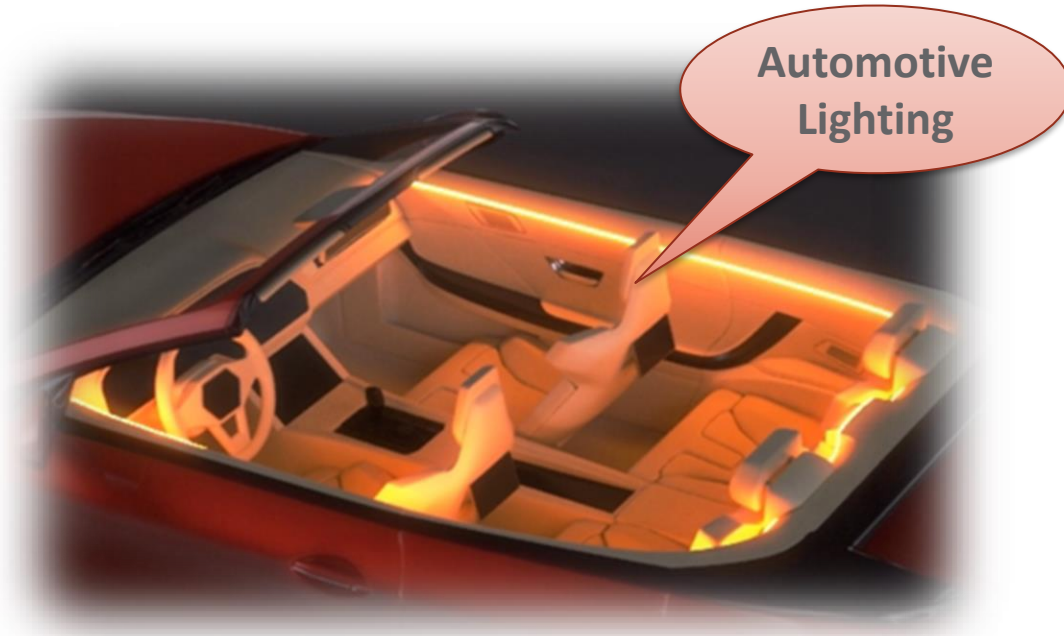
* ESD / EMI protection not mandatory for APIX



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Business Segments and Goals

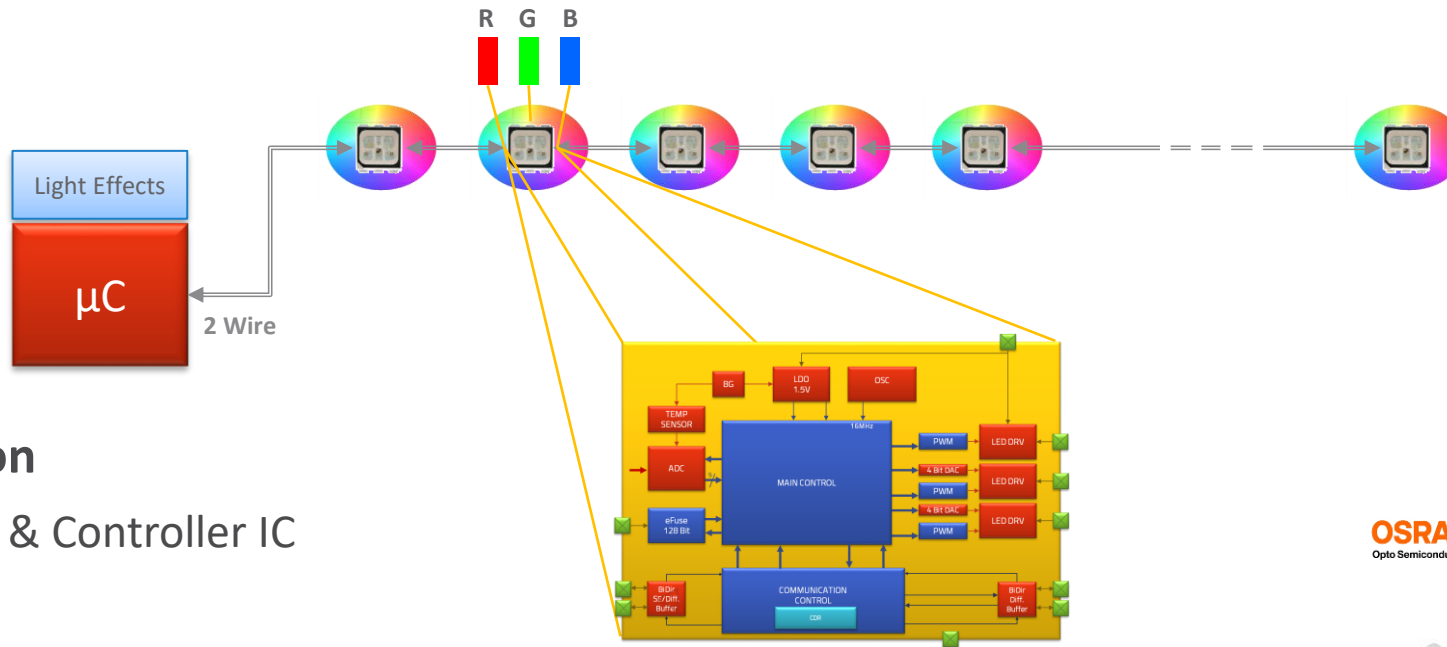


Provide **Smart LED Driver Chips**
to the **Automotive** Market for Dynamic Lighting
Solutions



Dynamic Ambient Lighting
Cluster Instrument with Tell Tales
Functional Lighting
LCD Panel – Local Dimming Backlight
External Lighting
Welcome Lighting
Logo Lighting

ISELED – *the* smart LED Technology



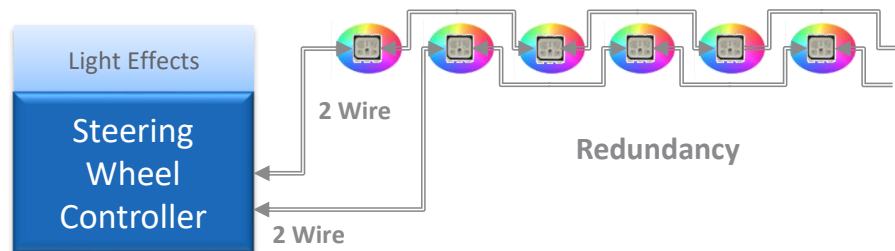
High Integration

- ISELED Driver & Controller IC
- LEDs
- Optics
- Integrated oscillator, bandgap etc,
- Nearly no external components necessary
- Lowest System Costs

Daisy-Chaining of up to 4079 LEDs



ISELED – Example Applications



Functional Lighting



Dynamic Ambient Lighting

Open Alliance

The open Alliance provides complete system solutions for smart LED, initially targeting automotive interior lighting.

More information can be found at <https://iseled.com/>.



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General Facts.

Standards

Inova is working with several standards such as VESA, MIPI Alliance, HDMI, DisplayPort Technology, High-bandwidth Digital Content Protection, Open LDI, and DVN.

Sales & Licensing

We sell our products worldwide – directly and via distributors.
We also licensing our technologies worldwide.

Awards 2017-2021

Frost & Sullivan: Customer Value Leadership Award 2017

Brand eins: Innovator 2018 in the sector „automotive supplier“

Focus: Growths Champion 2018

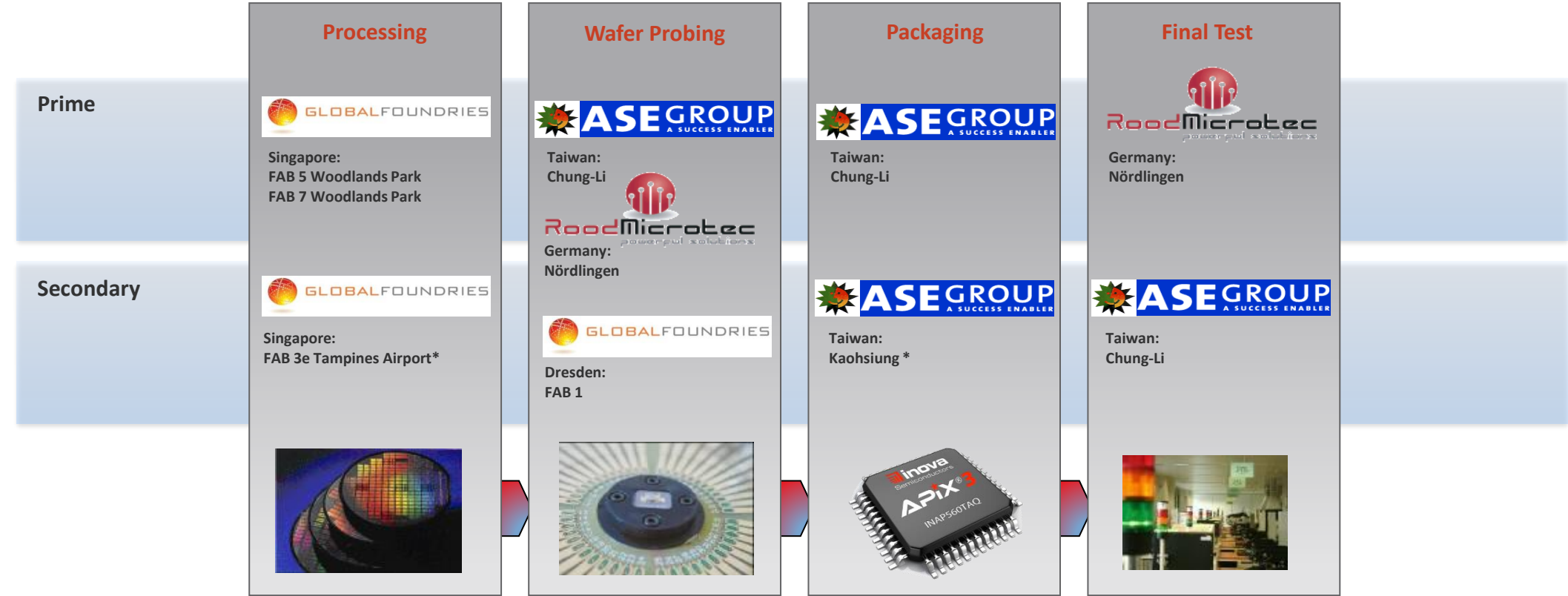
Focus: Growths Champion 2019

Focus: Growths Champion 2021

ElectroniqueS: Electrons d'Or 2019

Stifterverband: Innovative Through Research – Seal of Approval 2020/2021

Supply Chain.



* Transfer and Qualification required

Manufacturing and Quality.

Inova's company values emphasize a strong focus on quality and being a consistent reliable partner to its customers.

Inova is an ISO 9001:2015 certified company

High track records in delivery and quality

- ✓ A-supplier status with several customers

Support manufacturing with buffer stocks

Contingency planning and multisource production

Own quality and process management system

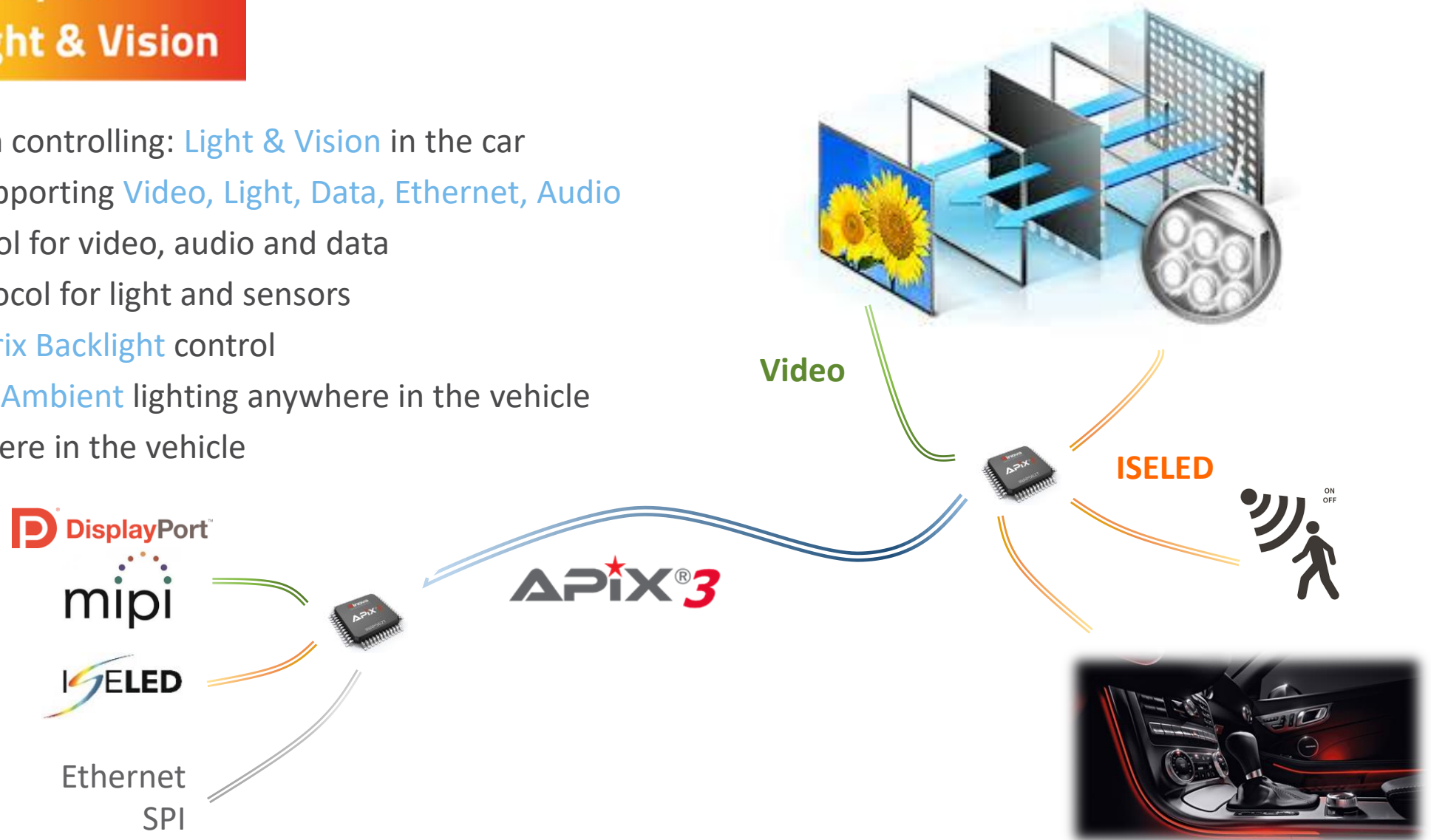
- ✓ AEC-Q100, PPAP, APQP etc. are all mandatory
- ✓ Continuous improvement process



Connectivity for Automotive Light & Vision

Symbiosis of APIX and ISELED

- Cockpit domain controlling: **Light & Vision** in the car
- ONE link for supporting **Video, Light, Data, Ethernet, Audio**
 - APIX protocol for video, audio and data
 - ISELED protocol for light and sensors
- ISELED for **Matrix Backlight** control
- **Functional** and **Ambient** lighting anywhere in the vehicle
- **Displays** anywhere in the vehicle



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