



Connected Secure Systems (CSS) Division Call hosted by Deutsche Bank

Thomas Rosteck, Division President CSS
3 March 2021



A woman with long dark hair is wearing a VR headset and holding controllers, appearing to interact with a virtual environment. The background is a dark blue space filled with glowing white particles and a complex network of white lines and dots, resembling a digital or neural network. The text is overlaid on a semi-transparent white horizontal band.

We empower the world
to easily connect through smart and trusted solutions

We empower the world to easily connect through smart and trusted solutions



Applications

Industrial and Consumer IoT

Industrial



Smart Home



Automotive



Gaming



Wearables



Payment, ID, Ticketing

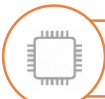
Payment



Identification



CSS capabilities



Compute



Wireless Connectivity



Security

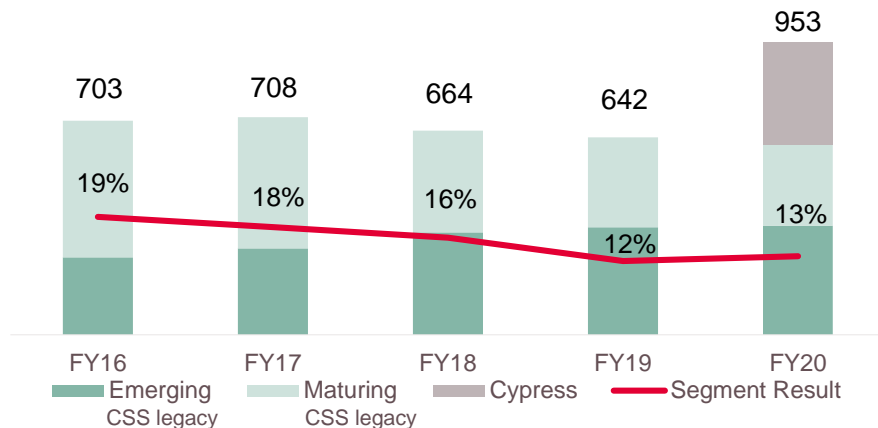


Software

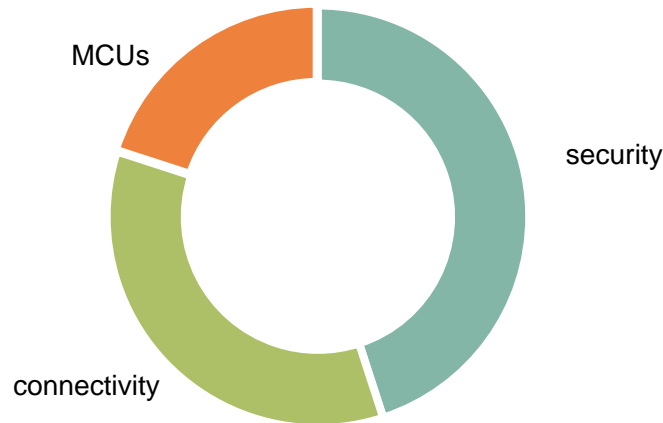
CSS at a glance – CSS legacy has been transitioning from a product to a system solutions provider

CSS reported revenue and Segment Result Margin

[EUR m]



FY20 revenue split by product group*



*Illustrative aggregated FY20 revenue, incl. 12 months revenue contribution from Cypress

Key customers

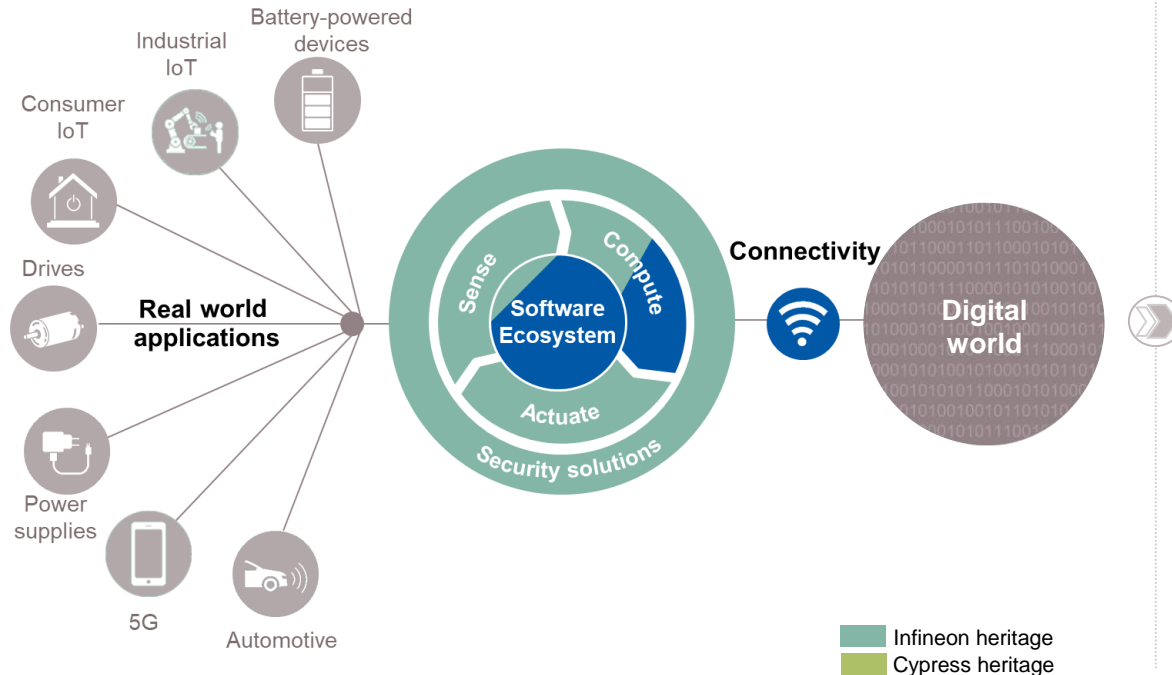


Market outlook for target applications is brightening – but foundry supply constraints limit upside potential in 2021

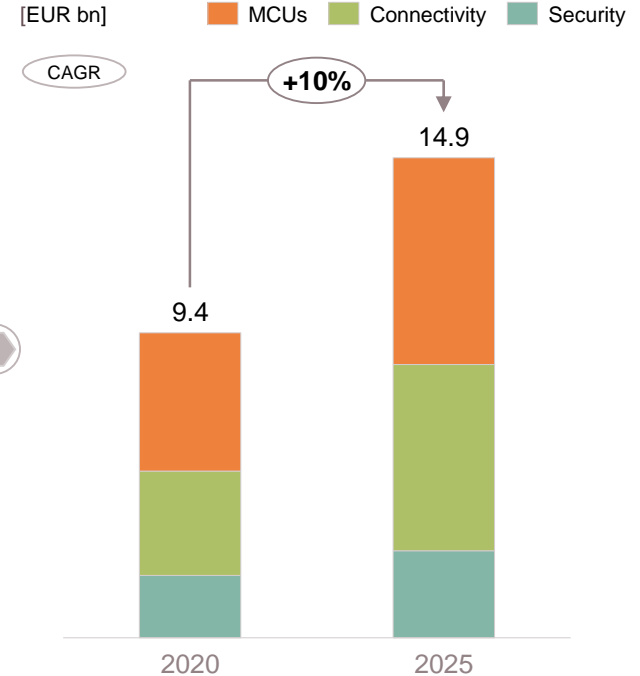
Applications (% of FY20 segment revenue)	Market Outlook for CY21	
Industrial and Consumer IoT ~70%		 › Growth driven by general market recovery in industrial automation and energy efficiency incentive programs for home appliances
		 › Return to growth, however lower level than previously expected › New features and technologies enter production and proliferate across models
		 › Increasing penetration rate of eSIM Automotive driven by increasing connectivity requirements › Connectivity technologies to improve in-car user experience
		 › Market growth driven by launch of new console models
		 › New product launches expected to boost demand › Further implementation of low-power processing and connectivity technologies across new models
Payment, ID, Ticketing ~30%		 › High demand for contactless payment solutions expected to continue
		 › Prolonged restrictions on international travel expected to further affect especially the issuance of passports

Compute, connectivity, security and software ecosystem capabilities enable CSS to address a growing market driven by the IoT

Infineon portfolio elements and link between real and digital world



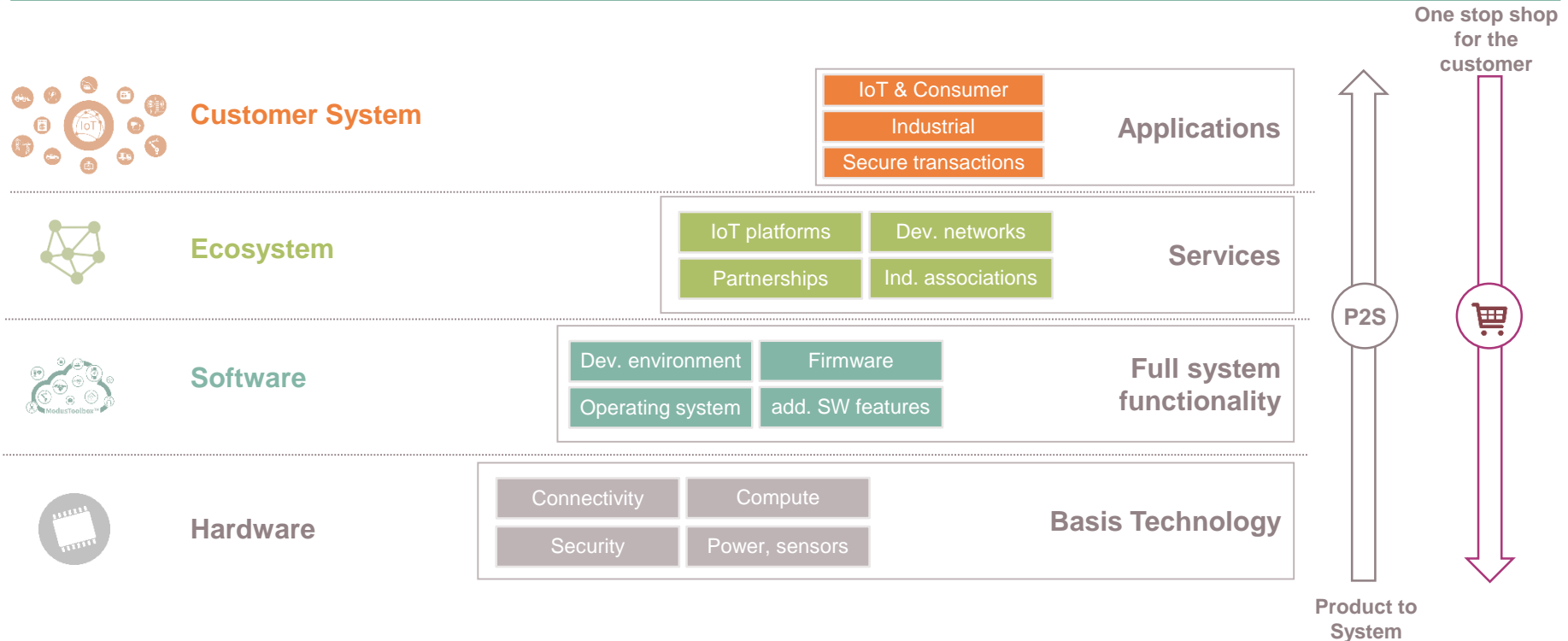
CSS market*



* Source: Infineon internal market model based on SAM view

Customer needs are best captured by our combination of a complete solution approach with a broad ecosystem

CSS P2S approach



ModusToolbox™ – Differentiation by seamless integration of compute and connectivity components into our customer products



ModusToolbox™ supports our easy-to-integrate approach and underpins our P2S strategy

Industrial and Consumer IoT

Industrial



Smart Home



Automotive



Gaming



Wearables



ModusToolbox™

Robust
Networking

Pre-Integrated

Cloud
Middleware

Rich Toolset



Robust,
low-power BT/BLE



Robust,
low-power Wi-Fi



Secure,
low-power compute



Precision HMI

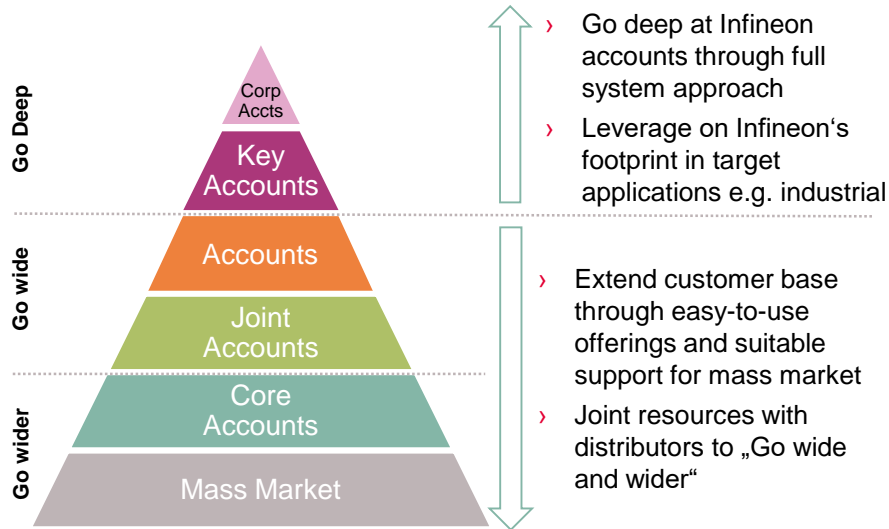
- › Integrated Compute and Connectivity development environment
- › Pre-integrated Compute and Connectivity for fast time-to-market and low-risk development
- › Combined platform simplifies ongoing maintenance
- › Exposes most advanced capabilities best-of-breed, low-power, robust connectivity
- › Seamless Integrated Design Environment (IDEs) flows
- › Full-function library manager supports collaborative code sourcing
- › Easy-to-integrate sub-systems with well documented APIs

Go-to-market approach – Extend focus towards „Go wide and wider“, smooth and balanced flow across the customer journey

CSS go-to-market approach



Proactive customer portfolio management



Ensure a smooth and balanced flow across the customer journey



Go Deep

- › Outbound marketing
- › Direct sales
- › Customer support

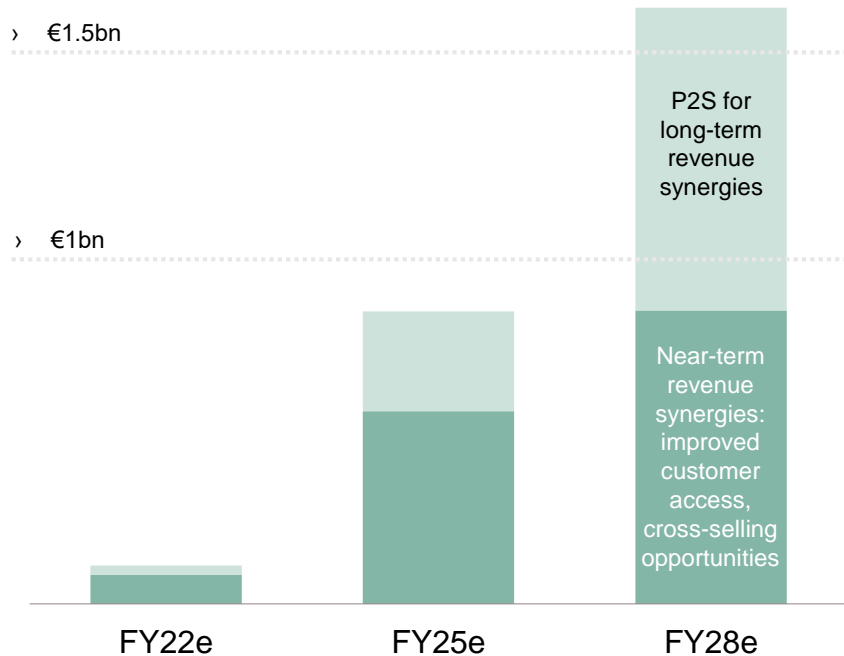


Go wide and wider

- › Enhanced digital capabilities
- › Inbound marketing (digitally driven)
- › Data-driven sales
- › Customer success management

CSS to contribute in two ways to reaping of revenue synergies from Cypress acquisition

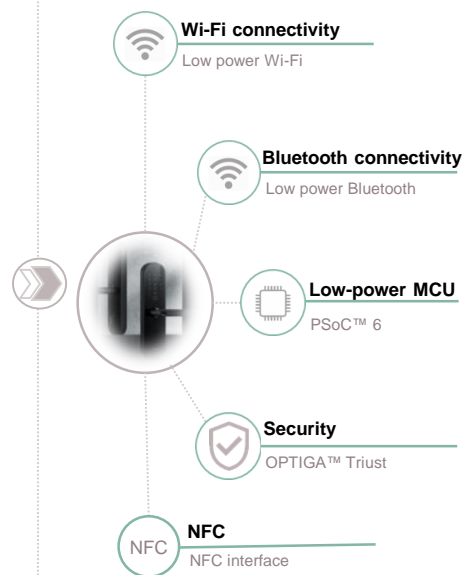
Planned ramp-up of revenue synergies (IFX Group level)



Synergies application examples

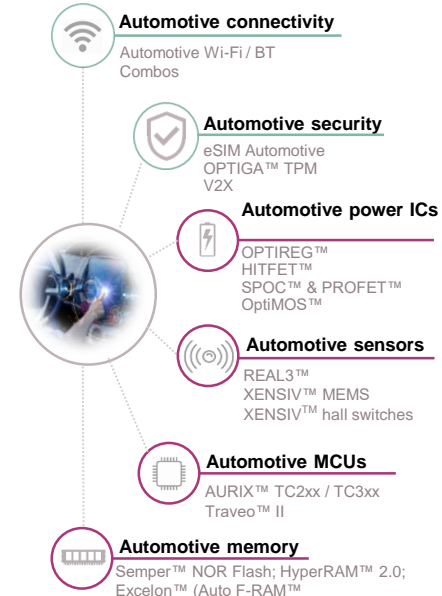
CSS only

Smart Door Lock




Cross-divisional

Automotive Infotainment



CSS offering
 Other Infineon divisions offering

The new CSS division brings together an industry-leading team of experts, technologies as well as the required global coverage



~1,800 employees

Top competence

Technical and go-to-market excellence in security hardware and software

Technical and go-to-market excellence in general purpose microcontrollers and wireless solutions

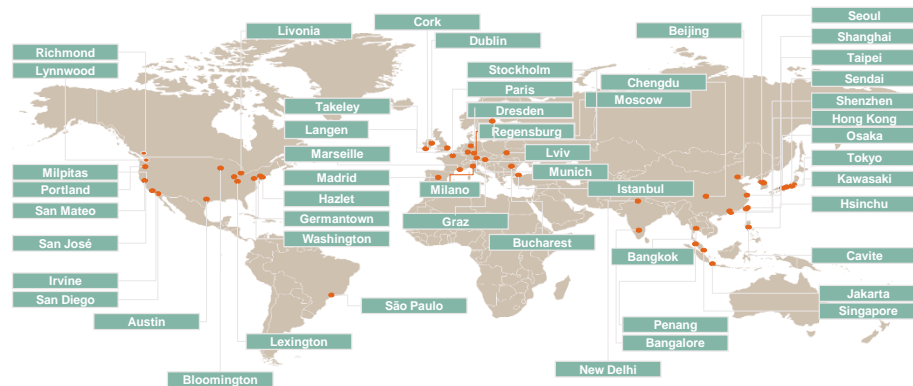
Top player in key markets

1 in security ICs^{1,2}

1 in payment¹

5 in Wi-Fi standalone ICs³

3 in Bluetooth standalone³



CSS Division Board



				
SMD	CFO	President	EVP	COO
Mike Balow	Stefan Trautwein	Thomas Rostek	Eric Toulouse	Thomas Schafbauer

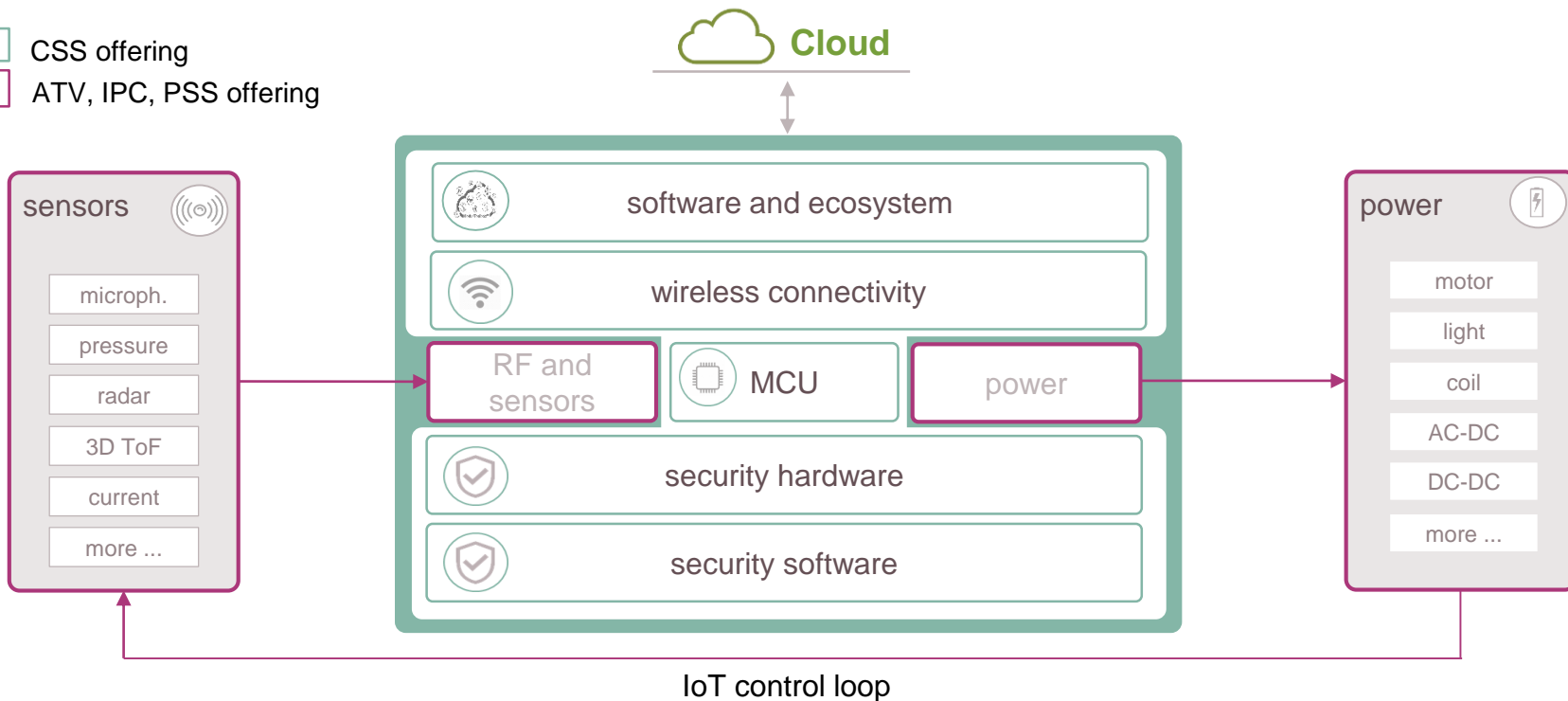
1) ABI Research: *Smart Card and Embedded Security IC Technologies*. October 2020.

2) excl. NFC Controllers; excl. NFC embedded Secure Element

3) ABI Research: *Wireless Connectivity Technology Segmentation and Addressable Markets*. November 2019.

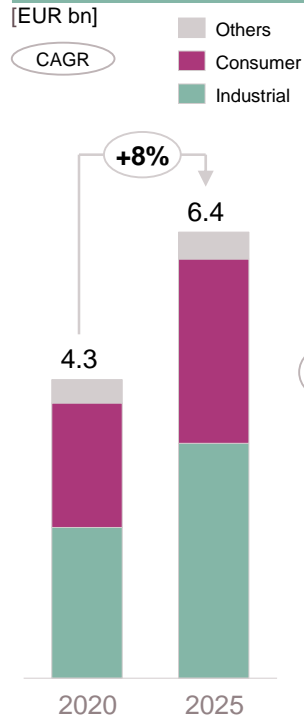
Infinion offers the entire system for IoT – CSS allows for a full system solutions approach to unlock new markets and applications

-  CSS offering
-  ATV, IPC, PSS offering



MCUs – Dynamic market environment; CSS is well set to tackle trends in IoT & Consumer as well as Industrial markets

MCU market*



* Source: Infineon internal market model based on SAM view

Trends in MCU markets



Continued growth of MCUs in smart home, driven by home automation devices and wearables



Industrial MCUs growing across wide range of applications



Blurring cost/performance differences between MCUs and MPUs



Beginning to embrace 32-bit MCU with machine learning (ML) acceleration for edge compute

Segments and focus topics

IoT & Consumer



- › Deliver core IoT blocks (MCU, radios, software) and bundled solutions
- › Pairing of MCU and connectivity
- › Prepare and enable emerging edge compute wave with ML capabilities
- › Leading integrated security features

Industrial

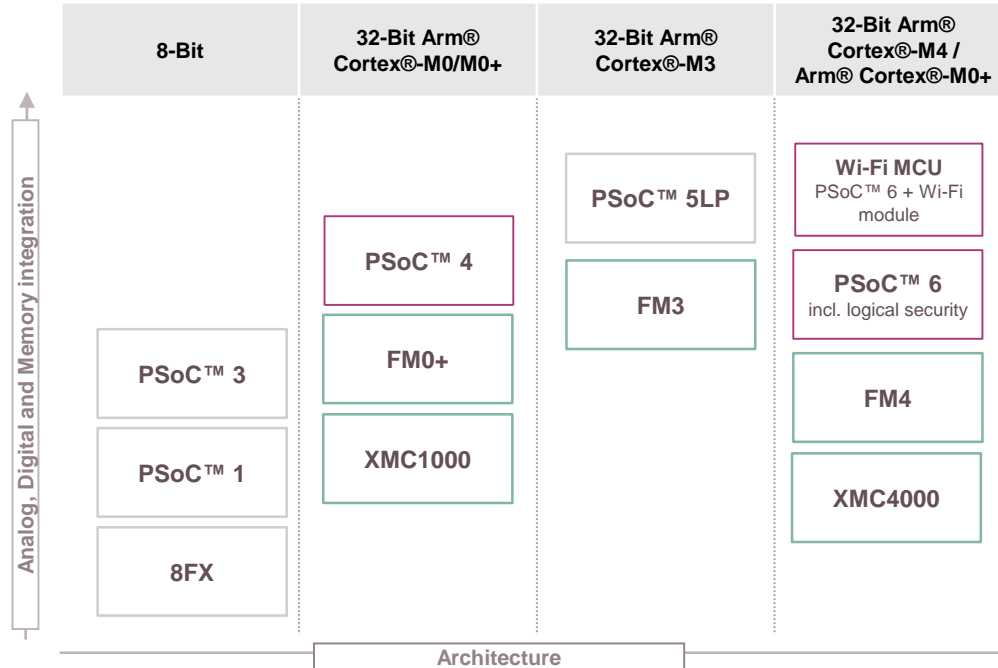


- › Deliver highly differentiated MCU based industrial solutions
- › Provide easy to use sub-system solutions based on Infineon building blocks (sensor control, motor control, power management and connected MCUs)

We offer a wide portfolio of microcontrollers to enable IoT & Consumer and Industrial applications



MCU portfolio overview



IoT & Consumer

- › **PSoC™ 6** MCUs for the broad-base of IoT and consumer applications, bringing outstanding low power, connectivity, and security
- › **PSoC™ 4** delivers unique software-defined peripherals and industry leading capacitive sensing designs



Industrial

- › **XMC family** of MCUs targets industrial applications with industrial-specific peripherals and extended temperature range
- › **FM family** of MCUs delivers robust performance for industrial applications

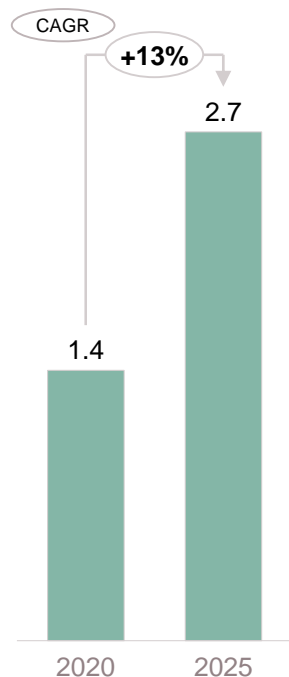


Other: specialized and legacy

Wi-Fi – Market driven by a dynamic environment of specifications; CSS is addressing main growth trends

Wi-Fi market*

[EUR bn]



* Source: Infineon internal market model based on SAM view

Trends in Wi-Fi markets



Specially suited for IoT devices with basic connectivity, low cost, low-power requirements



Focus on high bandwidth IoT applications to ensure data transmission



New standard Wi-Fi 6 is gaining momentum initially on high-performance applications

Segments and focus topics

IoT & Consumer



- › Broad portfolio with Wi-Fi 4 / 5 / 6 standalone and combo offerings
- › Lead transition to Wi-Fi 6 for IoT

IoT low-power



- › Extend leadership on low-power devices
- › System-level power optimization using optimized Wi-Fi product architecture

Automotive















- › Extend leadership in automotive infotainment and telematics with Wi-Fi 6 combo offerings
- › Enable enhanced use cases with low-energy audio in auto infotainment

Wi-Fi standalone and combos portfolio offers outstanding power and range for a wide set of applications



Wi-Fi portfolio overview

	Wi-Fi 4	Wi-Fi 5		Wi-Fi 6 / 6E
Higher connectivity and compute performance ↑	CYW43903 SB 1x1	CYW43907 1x1 SDIO/USB	CYW54907 DB 1x1	CYW89570* TB 2x2 BT5.2 
	CYW43012 ULP DB 1x1 BT 5.0 	CYW54590/1 DB 2x2 BT5.0/BT5.1 	CYW89459 DB 1x1 or 2x2 BT5.1 	CYW55573* TB 2x2 BT5.2 
	CYW43439 SB 1x1 BT5.0 	CYW4373 DB 2x2 BT5.0 	CYW89373 DB 1x1 BT5.0 	CYW55572* TB 2x2 BT5.2 
	CYW43363 SB 1x1			CYW55571* TB 1x1 BT5.2 
	 Wi-Fi alliance standard			

* sampling  = Wi-Fi / BT combo chip

IoT & Consumer

CYW43xxx and CYW54xxx families offer outstanding range and robust connectivity for IoT consumer applications

IoT (low-power)

CYW43012 offers outstanding power and range for low-power devices

Automotive

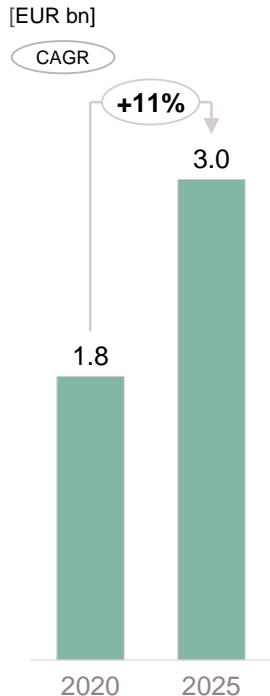
CYW89xxx powering state-of-the-art in-cabin multimedia user experiences



*CYW89459: Winner 2020
Autotech breakthrough
award*

Bluetooth – Market driven by further penetration of Bluetooth use cases across devices; CSS focus topics enable this development

Bluetooth (BT) market* Trends in Bluetooth markets



* Source: Infineon internal market model based on SAM view



Continued growth in smart home, driven by home automation devices and wearables



Covid-19 provides tailwinds for work-from-home electronics and continued digitalization



Shift from Bluetooth single mode and BT/BLE to BLE single mode



LE Audio and Mesh 1.1 are new standards for BT audio and device networks

Segments and focus topics

Smart Home



- › Focus on Mesh 1.1 and Mesh 2.0 (upcoming) device network protocols
- › Drive engagements for emerging standards such as Connected Home over IP

Streaming & Compute



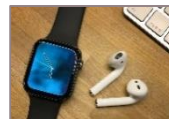
- › Grow BLE-HID (Human Interface Devices) footprint
- › Drive beacons, tags with BLE Location + security in asset-tracking/industrial

Automotive



- › Leverage Infineon Automotive footprint to add auto-body and sensor connectivity
- › Enhance in-cabin experience

Wearables



- › Infineon Wireless Audio Stereo Synchronization (WASS) in BT speakers as a differentiation
- › Proliferate footprint in wearables by leveraging WASS technology

CSS offers one of the world's most widely deployed Bluetooth chipset portfolio

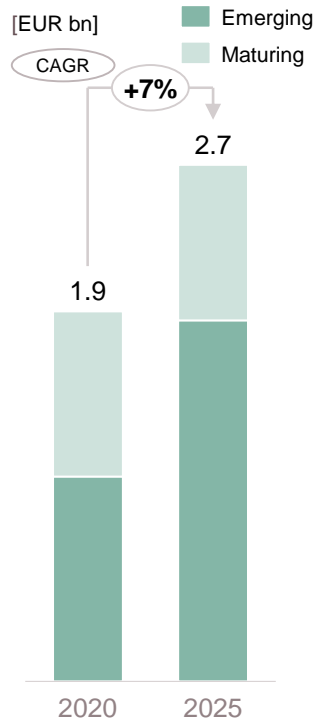


BLE SoC portfolio overview

Bluetooth Low Energy	Bluetooth / Bluetooth Low Energy (BT/BLE) Dual-mode SoCs			
<div>20736/7 BLE5.2 Arm® Cortex®-M3</div>	<div>20735 BT/BLE 5.0 Arm® Cortex®-M4</div>	<div>20719 BT/BLE 5.1 Arm® Cortex®-M4</div>	<div>20704 BT/BLE 5.2</div>	<div>89071 BT/BLE 5.0 Arm® Cortex®-M3</div>
<div>20835 BLE 5.2 Arm® Cortex®-M4</div>	<div>20739 BLE5.1/Thread/ CHIP Arm® Cortex®-M4</div>	<div>20819/20 BT/BLE 5.2 Arm® Cortex®-M4</div>	<div>20706/7 BT/BLE 5.2 Arm® Cortex®-M3</div>	<div>89072 BT/BLE 5.0 Arm® Cortex®-M3</div>
<div>PSoC™ 4BLE BLE4.2/5.1 Arm® Cortex® M0+</div>			<div>20721 BT/BLE 5.1 Arm® Cortex®-M4</div>	
<div>PSoC™ 6BLE BLE5.2 Arm® Cortex® M4/ Arm® Cortex® M0+</div>				
	Bluetooth Mesh	Dual-mode Audio	Automotive	
				<div>Smart Home</div> <div>BT mesh solutions optimized to connect home networks</div>
				<div>Streaming & Compute</div> <div>Ultra-low-power BLE solutions for remote and PC accessories</div>
				<div>Automotive</div> <div>BT-BLE dual-mode audio solutions in infotainment</div>
				<div>Wearables & Hearables</div> <div>BT audio solutions with Wireless Audio Stereo Sync in wearables</div>
	product type			

Security – Several long-term key trends driving value, generating emerging opportunities, shaping CSS' focus in the security field

Security ICs market*



* Source: Infineon internal market model based on SAM view

Trends in security ICs market



Proliferation of contactless payment



Growth of payment-enabled wearables



Proliferation of IoT devices with increased security requirements



Increasing penetration of eSIM Consumer in mobile devices



Anti-counterfeiting for consumer devices to protect end users' health and experience

CSS focus

Innovation leadership

- › Leading silicon technology platforms
- › Contactless performance
- › Secure embedded control

Increasing solution share

- › Enhance full solutions portfolio (silicon + software) with extension of SECORA™ and OPTIGA™ families

Prepare for market opportunities

- › Address adjacent and new market opportunities like biometric cards, wireless charging, new authentication applications, among others

Segments



Payment

Contactless, smart wearables and accessories, biometric cards



Identity

Electronic identification



Ticketing & Access

eTicketing, access management



Device Authentication

Accessories, printer authentication, battery authentication, wireless charging



Mobile Security

eSIM Consumer, SIM



Trust Anchors

IoT nodes & infrastructure, automotive security

CSS has the most comprehensive security portfolio of controllers and solutions to address market opportunities

Security portfolio

Smart cards; new form factors

Embedded security

Security Controllers

SLCxx

SLExx

SLIxx

SLMxx

Full solutions (Hardware + Software)

SECORA™
Pay



SECORA™
Connect



SECORA™
ID



SECORA™
Blockchain



OPTIGA™
Connect



OPTIGA™
TPM



OPTIGA™
Trust



OPTIGA™
Authenticate

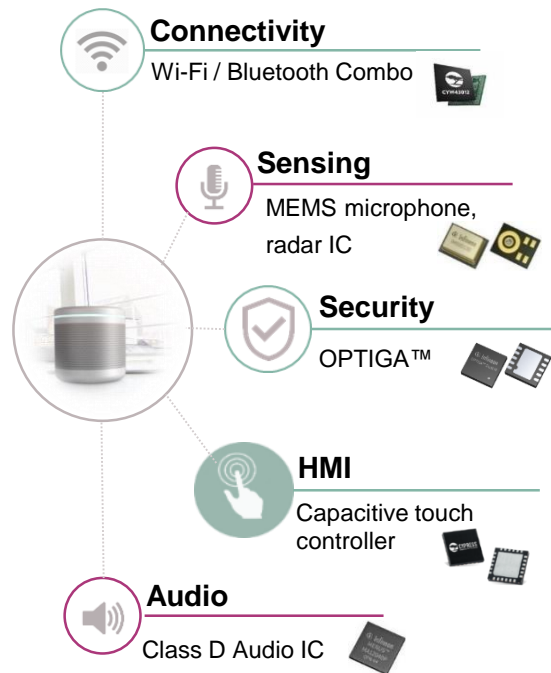


Significant synergy potential of a combined company product portfolio

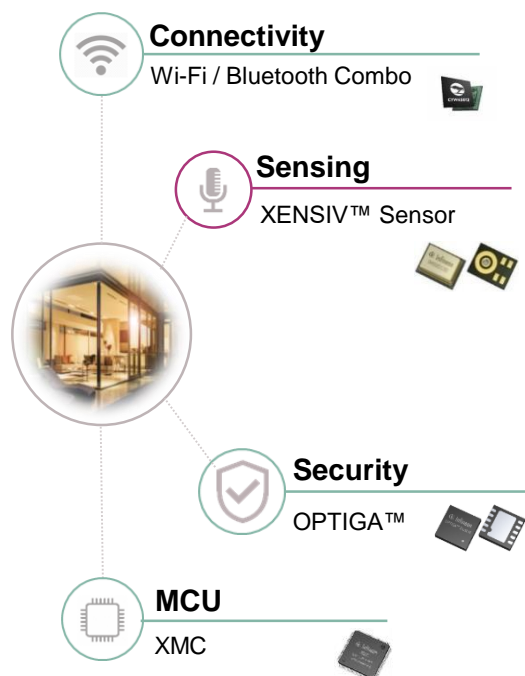
Synergies application examples

□ CSS offering □ Other Infineon Divisions offering

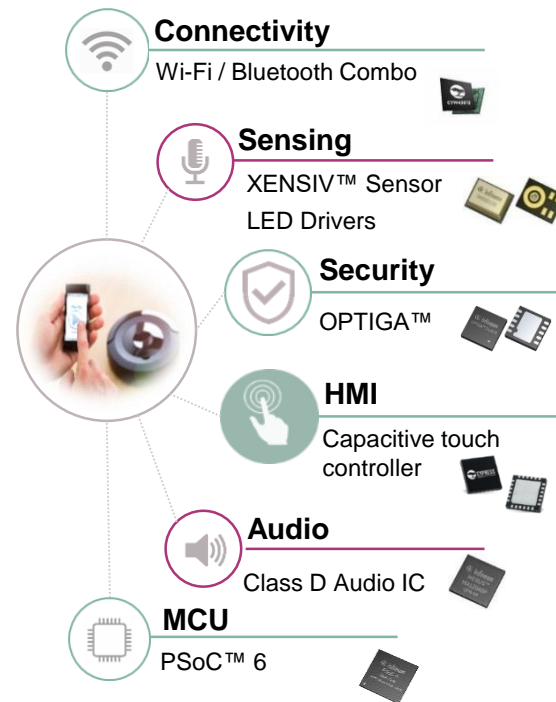
Smart speaker



Smart lighting



Service robots



Key takeaways



CSS **empowers** the world to **easily connect** through **smart and trusted solutions**

Combination of CSS capabilities including compute, connectivity, security and software ecosystem, allows for a **full system solutions approach** to unlock new markets and applications

Portfolio strengths and **CSS focus activities** to address market trends in compute, connectivity and security set the basis for **tackling growth opportunities**

Focus on software, ecosystem and customer systems enables **Product-to-System** (P2S) and **one-stop-shop** for the customer

Go-to-market approach focused on **extending customer base** and ensuring a **smooth and balanced flow** across the **customer journey**



Part of your life. Part of tomorrow.

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