

Speed Without Compromise: Securely Scaling Advanced Chip Development

AMBITION

A **global semiconductor manufacturer** needed to accelerate development of advanced chips supporting next-generation mobile, automotive, and AI technologies. Scaling engineering capacity was critical — but the highly sensitive nature of semiconductor IP meant security could not be compromised.

The challenge was clear: **rapidly expand pre-silicon and IC design capabilities while operating under strict physical, network, and operational security requirements.** The organization required a trusted partner capable of delivering speed and technical depth without compromising security at scale.

To achieve this, the organization aimed to:

- **Accelerate chip development:** Scale engineering capacity across complex semiconductor programs.
- **Protect sensitive IP:** Operate under uncompromising physical, network, and operational security controls.
- **Support advanced process nodes:** Deliver design and verification across leading-edge semiconductor technologies.

ACTION

The manufacturer partnered with **Wipro Engineering – Connected Services** to establish a dedicated, highly secure Offshore Development Center (ODC) in Korea. Purpose-built for the client's operations, the facility enforced strict physical access, network isolation, and operational security controls.

Operating within this secure environment, Wipro engineers functioned as a direct extension of the client's internal foundry and product teams across three critical engineering areas:

- **Pre-Silicon Verification:** Delivered rigorous validation for mobile, automotive, digital television, and audio/display integrated circuits.
- **Physical Implementation:** Executed physical design and implementation for complex ARM-based system-on-chips (SoCs).
- **RTL Engineering:** Developed RTL designs for specialized audio components used in high-end headsets and display devices.

AMBITIONS REALIZED

Over a five-year engagement, Wipro integrated a dedicated team of **170+ engineers**, turning internal capacity constraints into a sustained competitive advantage.

The Business impact:

- **Advanced process node readiness**, with successful physical designs delivered across nodes ranging from 45nm to 3nm, 4nm, and 5nm.
- **Deep engineering expertise**, enabling reliable execution of complex tasks such as low-power analysis, automated place-and-route, and advanced clock design.
- **Consistent security compliance**, maintaining a perfect security record with zero reported physical, network, or operational incidents over five years.

By embedding a trusted, highly secure engineering capability, the client accelerated chip development while maintaining complete control over sensitive IPs.

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