

Sustainability from Idea to Market with Requirement Traceability and Evolution

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March 18, 2014



Infineon and International Rectifier: A Powerful Combination



A Powerful Combination

- As of **January 2015**, International Rectifier is an Infineon Technologies company
- Combined **pro-forma revenue of ~€5,150m*** (~6,950m USD) in Infineon 2014 fiscal year
- About **34,000 employees worldwide***
- Strong technology portfolio with more than **22,800 patents and patent applications** (as of September 2014)
- **32 R&D locations; 20 manufacturing locations**

*non-audited figures

We Focus on Our Target Markets

Focus Areas

- Energy Efficiency
- Mobility
- Security



Core Competencies

- Analog/Mixed Signal
- Power
- Embedded Control
- Manufacturing Competence

Our Target Markets

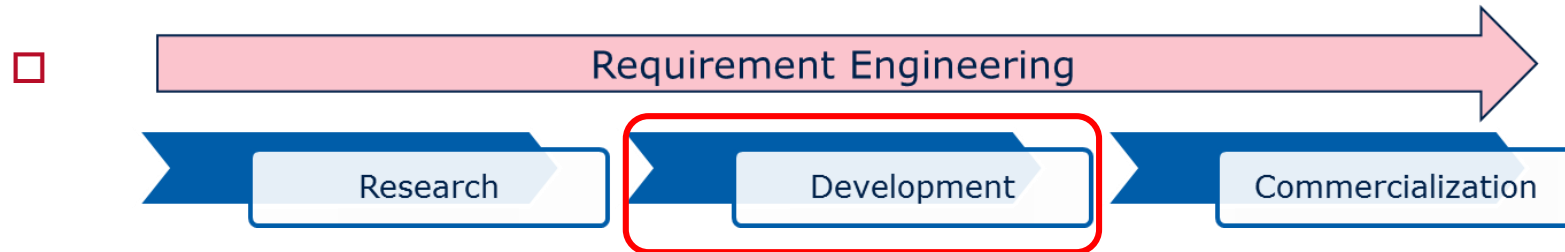
- Automotive Electronics
- Industrial Electronics
- Information and Communications Technology
- Security



■ Sustainability

- Ability to maintain engineering continuity
- Endurance of systems, processes and people (flow)

■ from Idea to Market



■ Evolution

- Adjustment to new learnings
- Continuous adaptation to changing external circumstances

Agenda

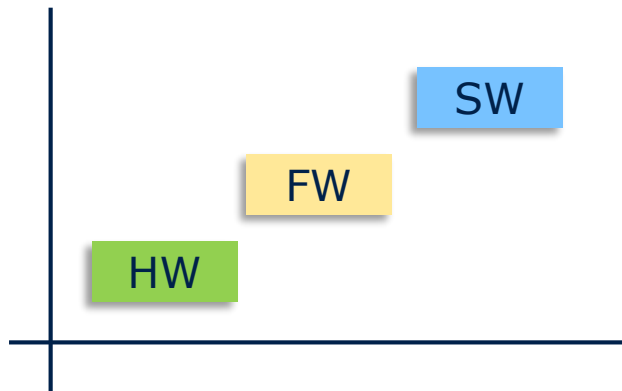
Problem statement:

Transitioning from sequential to co-development

1. Classes of gaps and how to address them
 1. Background gaps
 2. Workstyle gaps
 3. Tool gaps
 4. Naming gaps
2. Solution Concept and Conclusion
3. Discussion

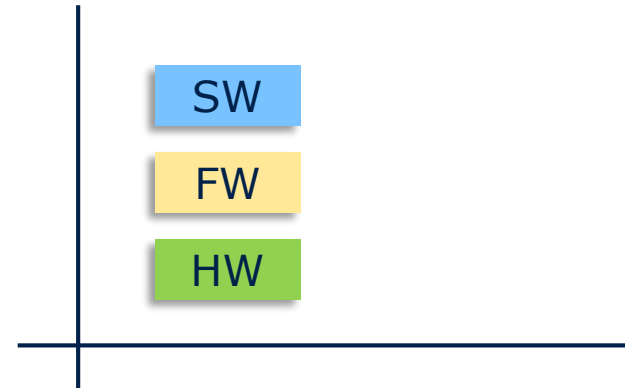
Transitioning ...

from Sequential Development



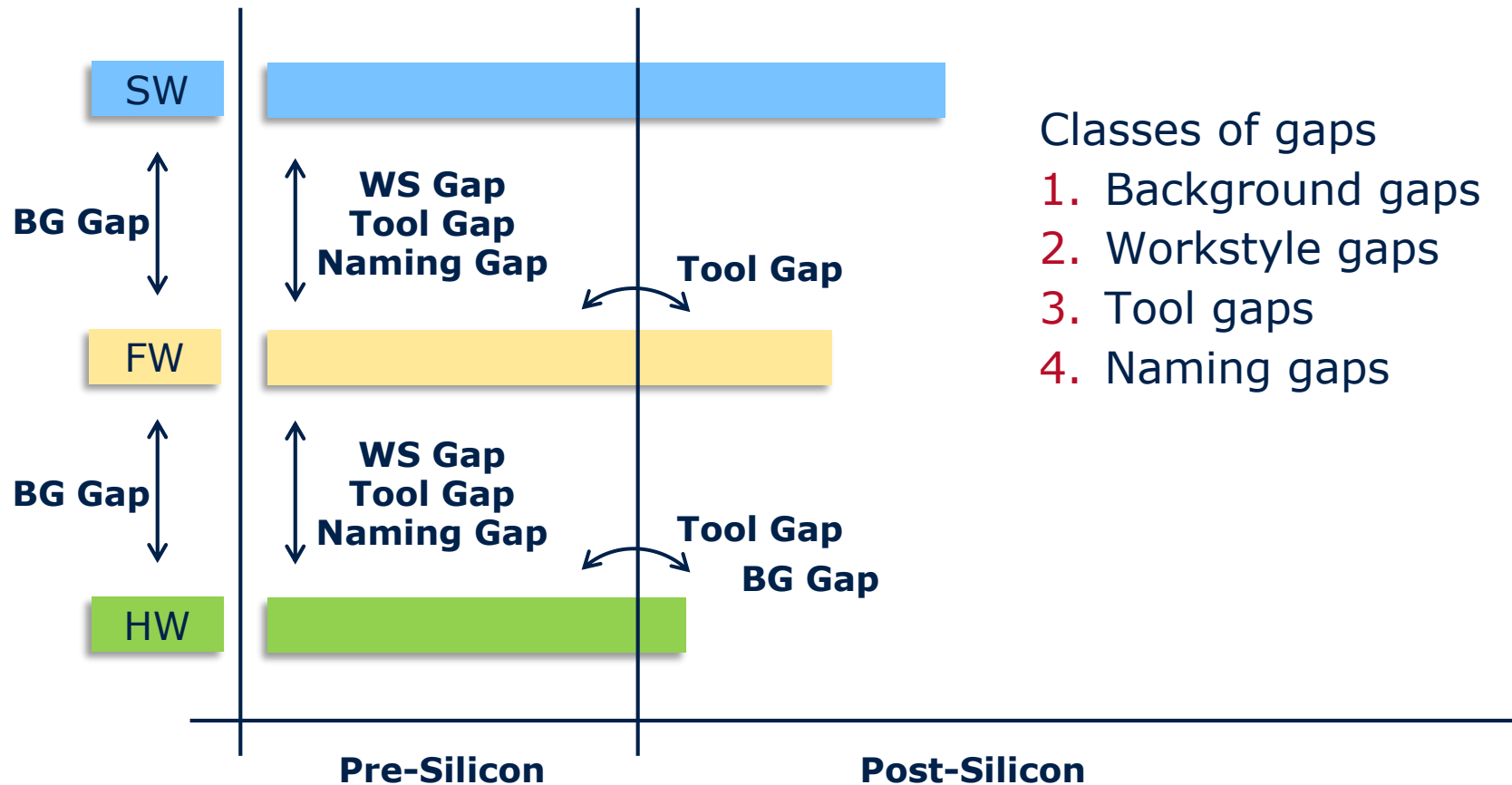
- Distinct domains
- No optimization across disciplines
- Slow response to market

... to Co-Development



- Simultaneous development
- Higher complexity
- Chance to build better systems
- Faster Time to Market

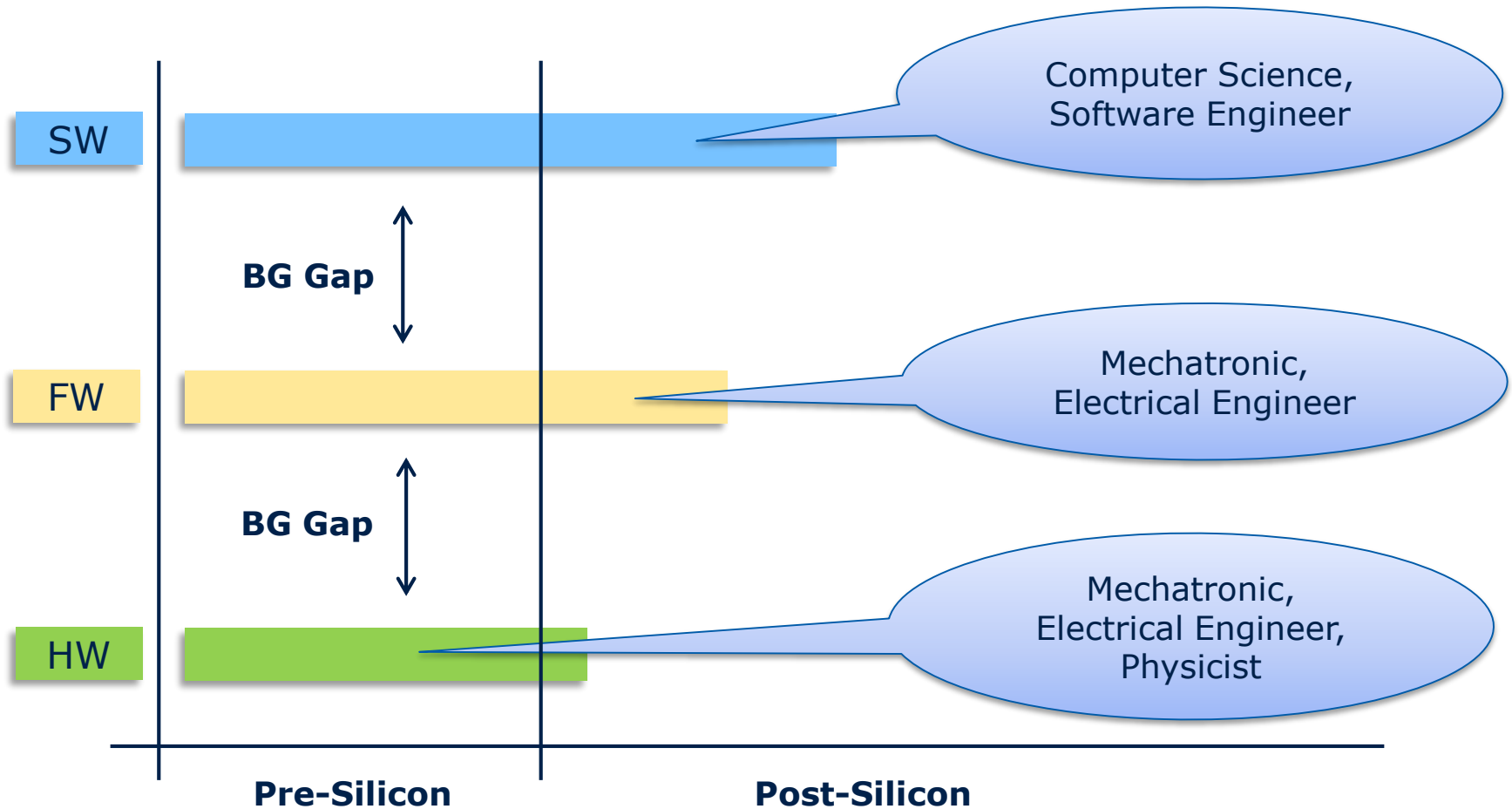
Co-Development :: Gaps Overview



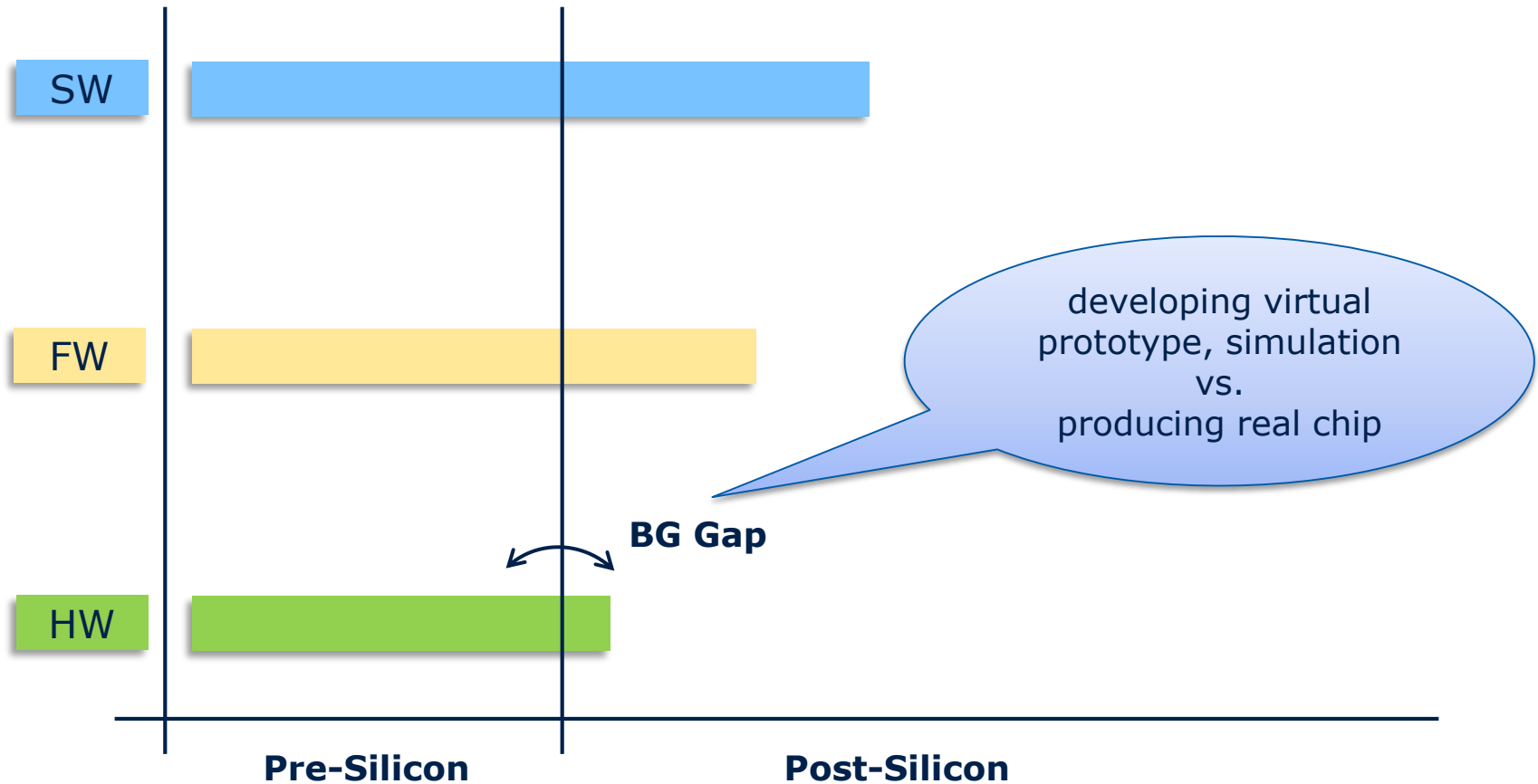
Classes of gaps

1. Background gaps
2. Workstyle gaps
3. Tool gaps
4. Naming gaps

Co-Development :: Background Gap

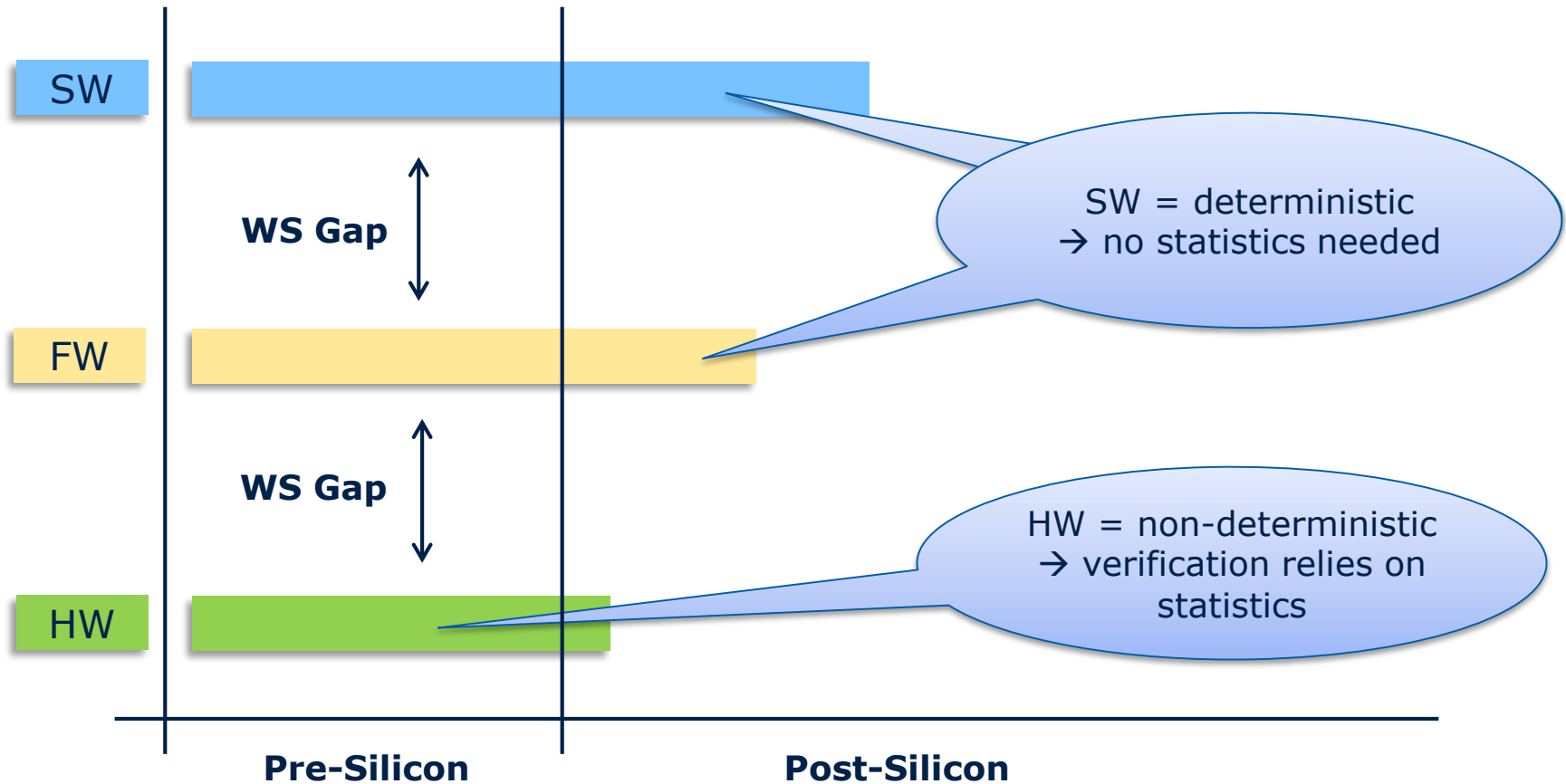


Co-Development :: Background Gap



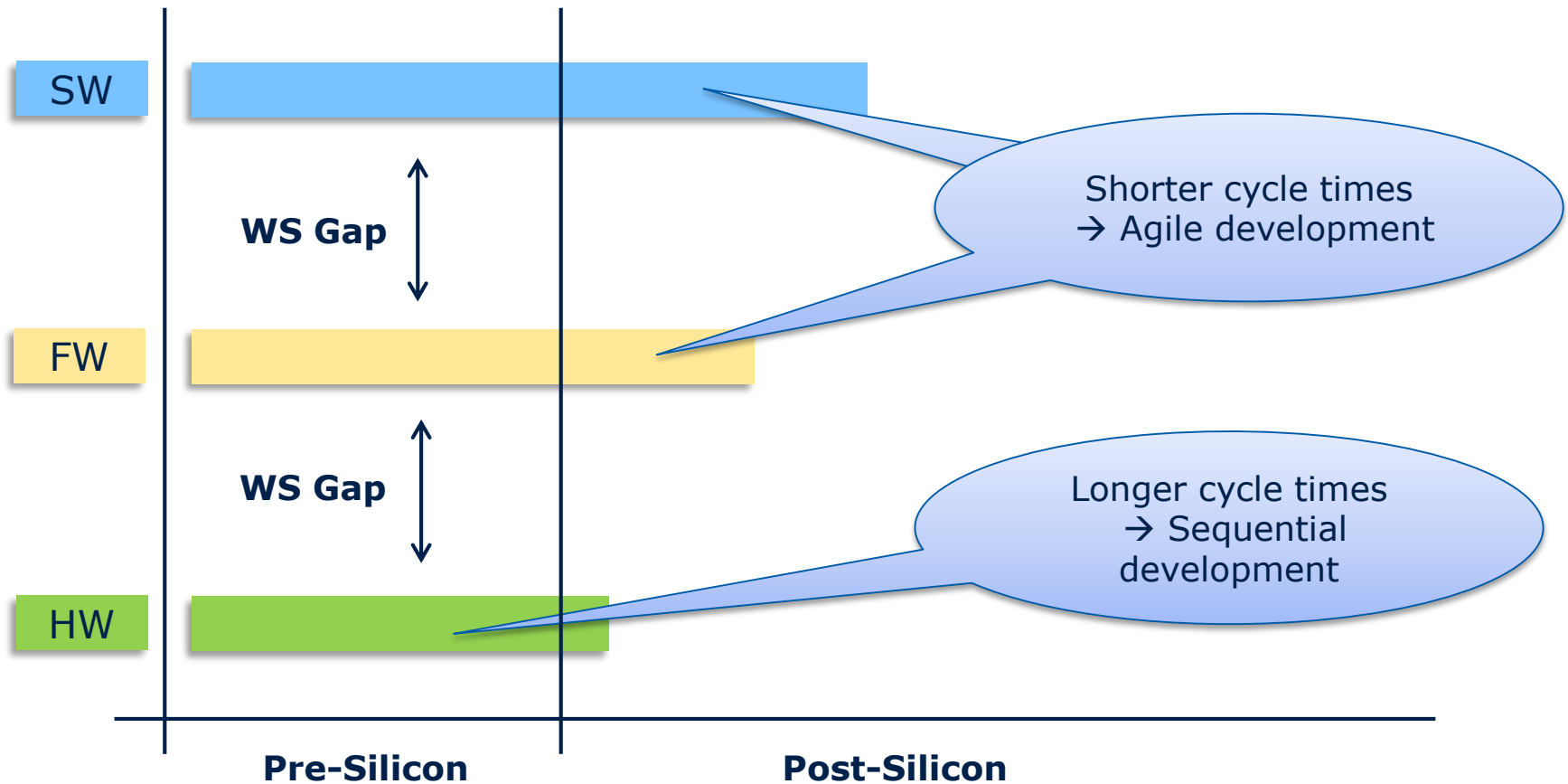
Co-Development :: Workstyle Gap

Verification Method ...

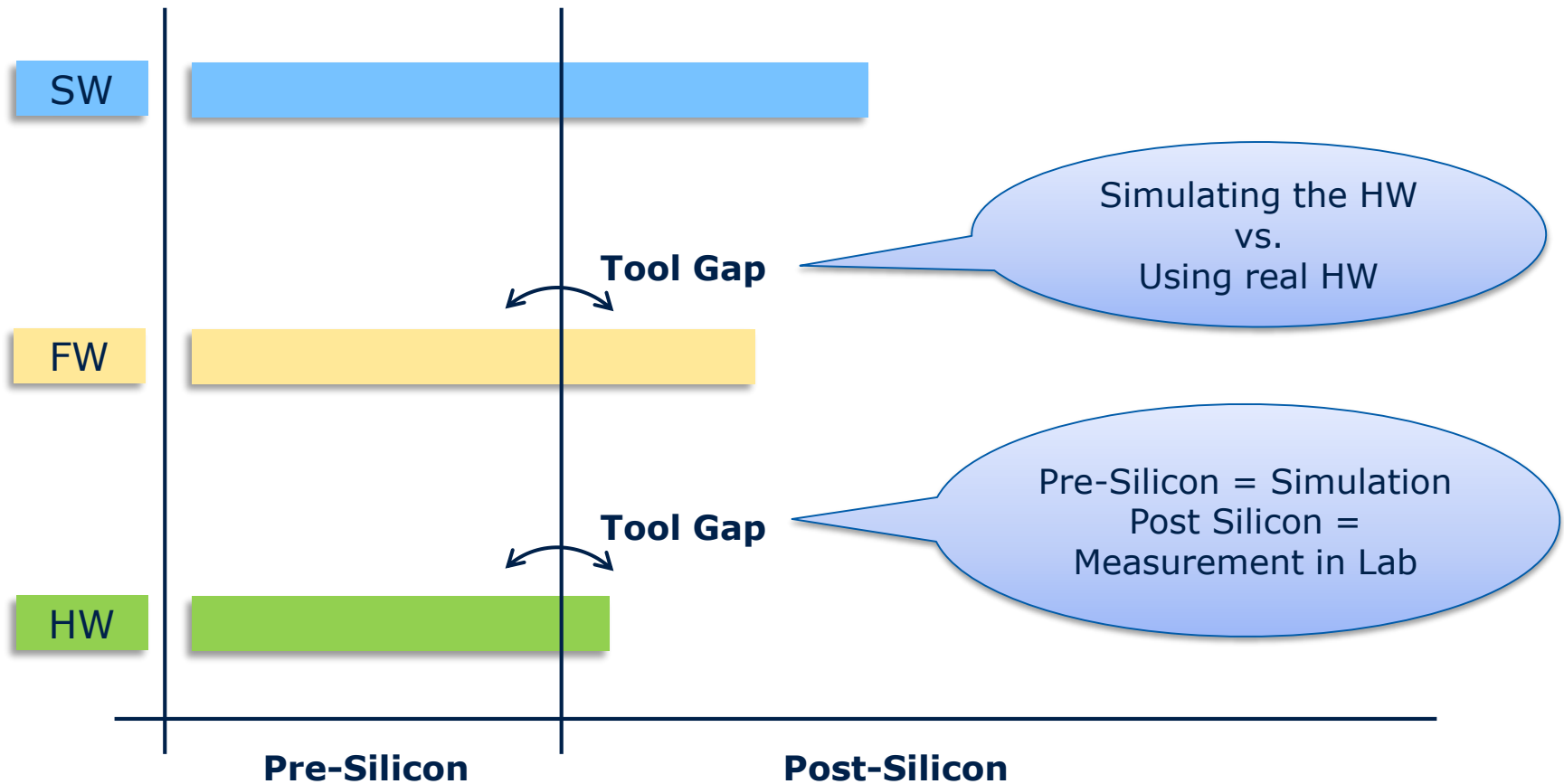


Co-Development :: Workstyle Gap

Development Methodology ...

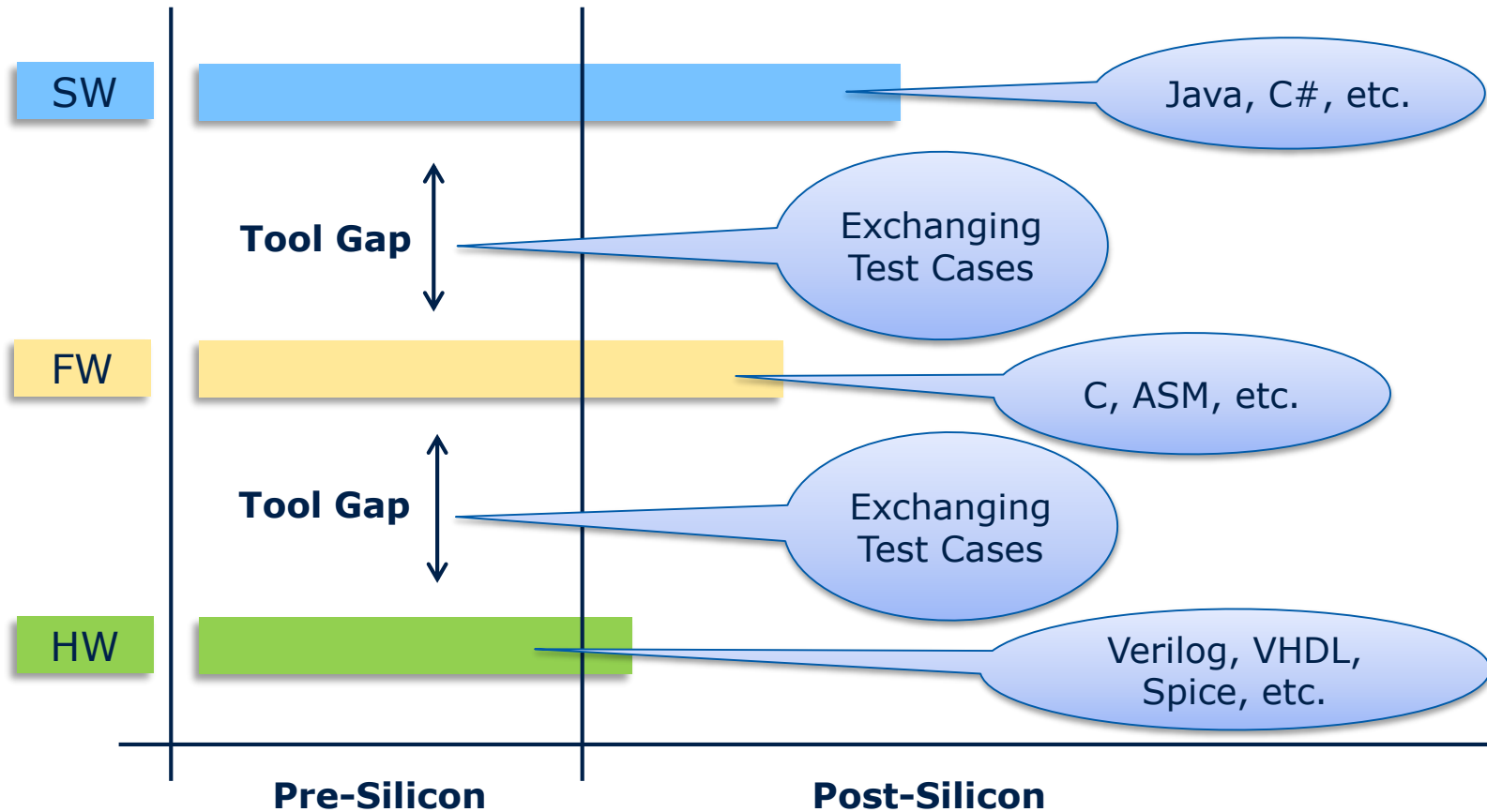


Co-Development :: Tool Gap

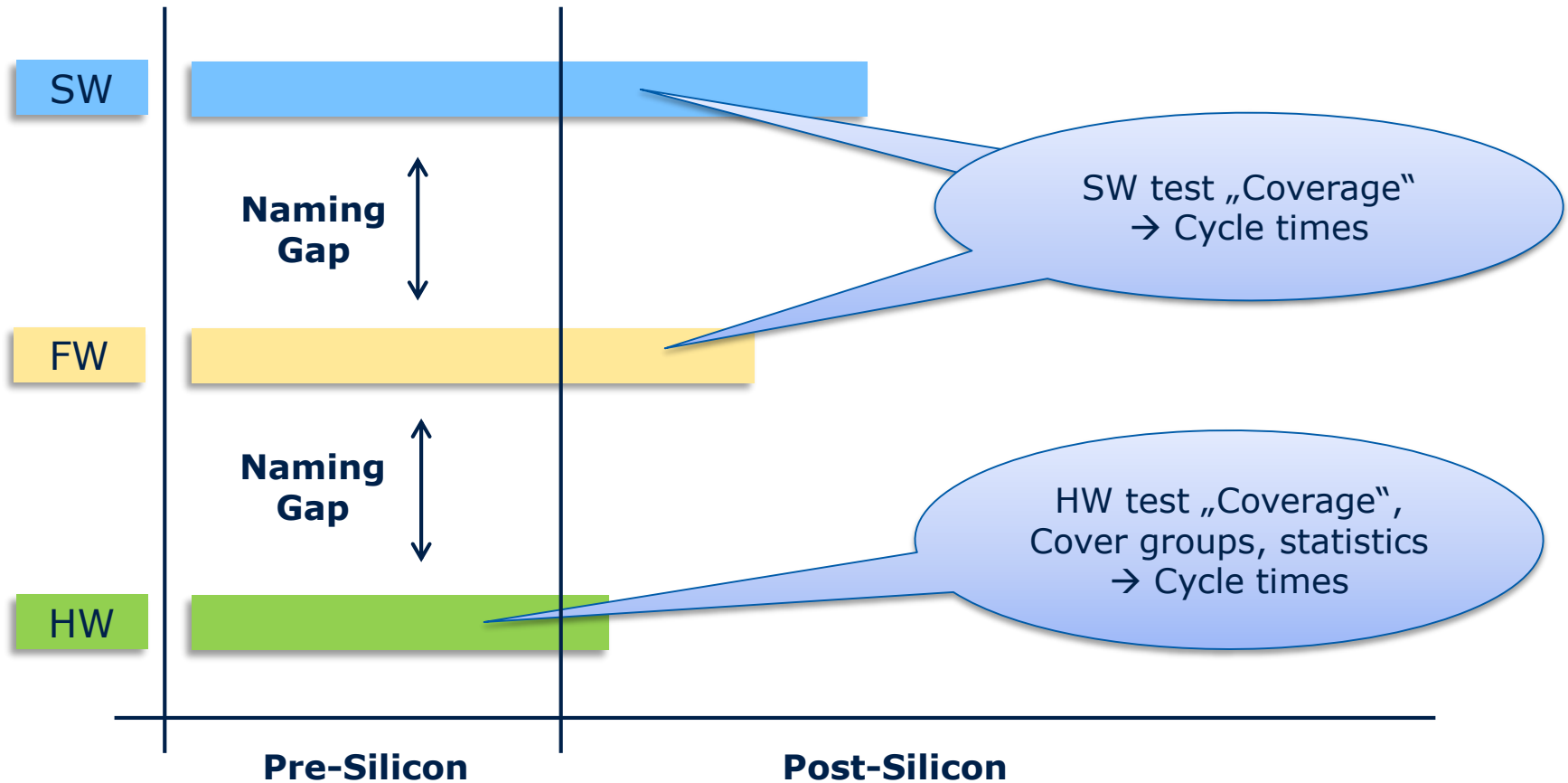


Co-Development :: Tool Gap

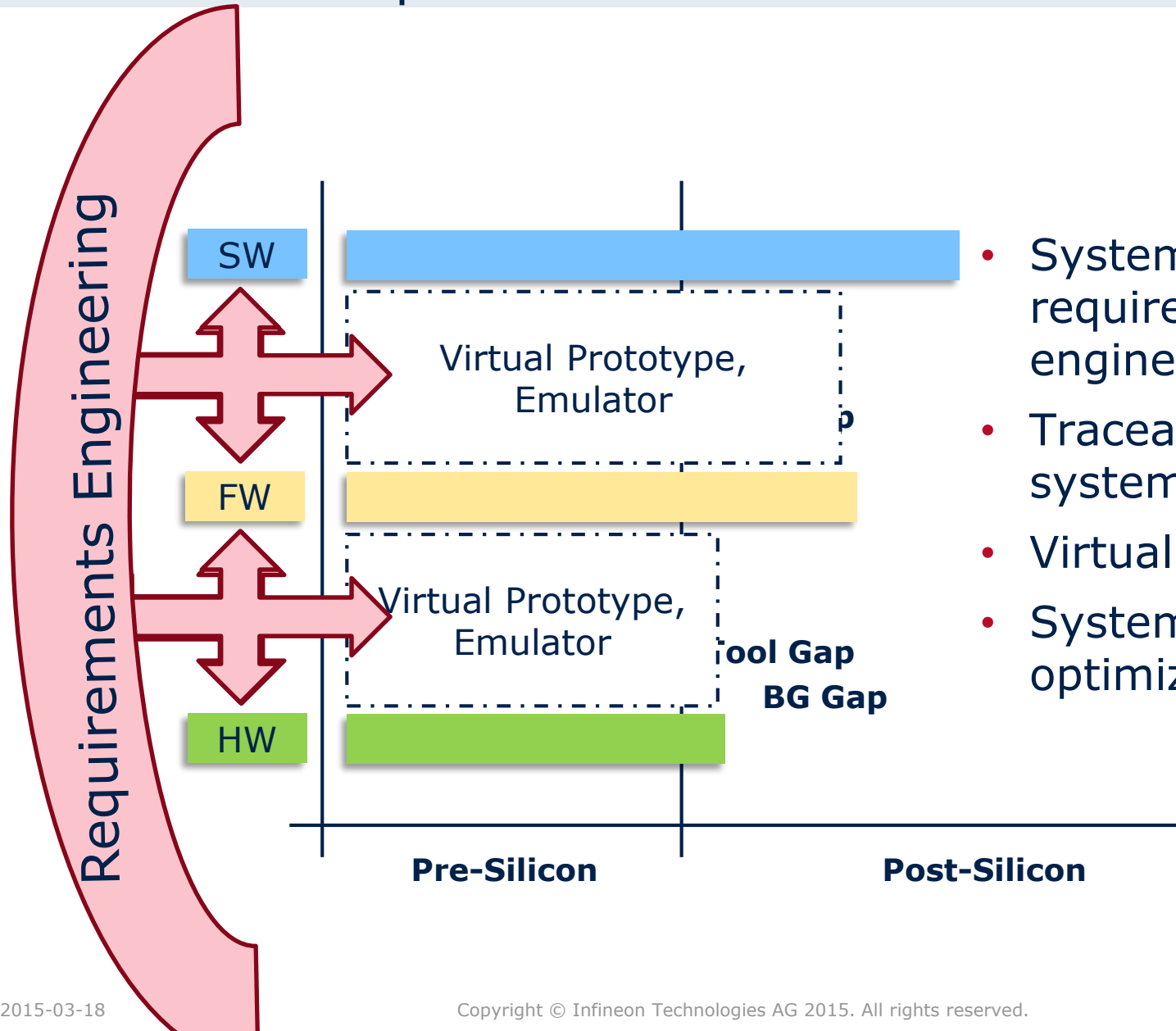
Programming languages and paradigms ...



Co-Development :: Naming Gap



Solution Concept



- System requirements engineering
- Traceability between system and domains
- Virtual prototypes
- System wide optimization

Details on Solution Concept and Challenges

■ Needed properties

- Allocation of unique IDs for all artifacts
- Version control on artifacts
- Traceability through different artifact versions
- Support of virtual prototype generation

■ Challenges

- Tools (Use Cases, text-oriented descriptions, Test Cases, etc.) have to provide "open" interface
- Abandon standard office tools
- Automated update in models remains difficult
- Smart verification and validation

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Connecting People

Thanks for your attention. Questions?





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