

# Topics

- Product Development 2 Process Areas
- Technical Solution (TS)
- Product Integration (PI)
- Verification (VER)
- Validation (VAL)
- Product Development 2 Summary
- Exercise 4: Impact of an Engineering Change

# Product Integration (PI)

An Engineering Process Area at Maturity Level 3

## Purpose

Assemble the product from the product components, ensure that the product, as integrated, behaves properly (i.e., possesses the required functionality and quality attributes), and deliver the product.

## Integrators



# When Product Integration Is Not Done Well...

Subsystems do not operate together.

There is increased integration test time.

The integration environment is inadequate to support the integration activities.

A product is released without all the component integration fully tested.

# Product Integration Goals

**SG 1**

## Prepare for Product Integration

Preparation for product integration is conducted.

**SG 2**

## Ensure Interface Compatibility

The product component interfaces, both internal and external, are compatible.

**SG 3**

## Assemble Product Components and Deliver the Product

Verified product components are assembled and the integrated, verified, and validated product is delivered.

The process area also has generic goals to support institutionalization.

# Product Integration Specific Practices -1

## SG 1

### Prepare for Product Integration

- SP 1.1 Establish an Integration Strategy
- SP 1.2 Establish the Product Integration Environment
- SP 1.3 Establish Product Integration Procedures and Criteria

## SG 2

### Ensure Interface Compatibility

- SP 2.1 Review Interface Descriptions for Completeness
- SP 2.2 Manage Interfaces

# Product Integration Specific Practices -2

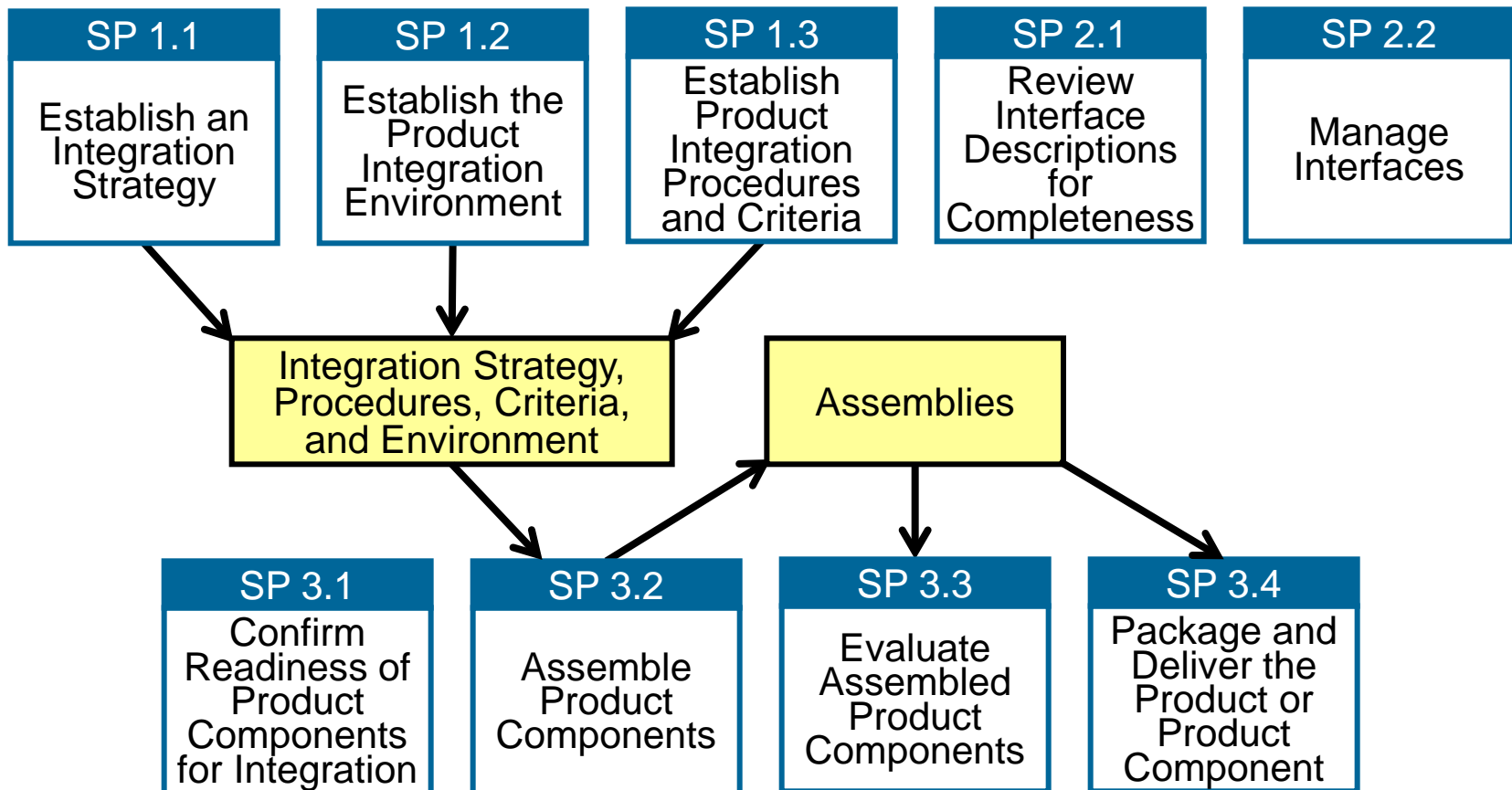
## SG 3

### Assemble Product Components and Deliver the Product

- SP 3.1 Confirm Readiness of Product Components for Integration
- SP 3.2 Assemble Product Components
- SP 3.3 Evaluate Assembled Product Components
- SP 3.4 Package and Deliver the Product or Product Component

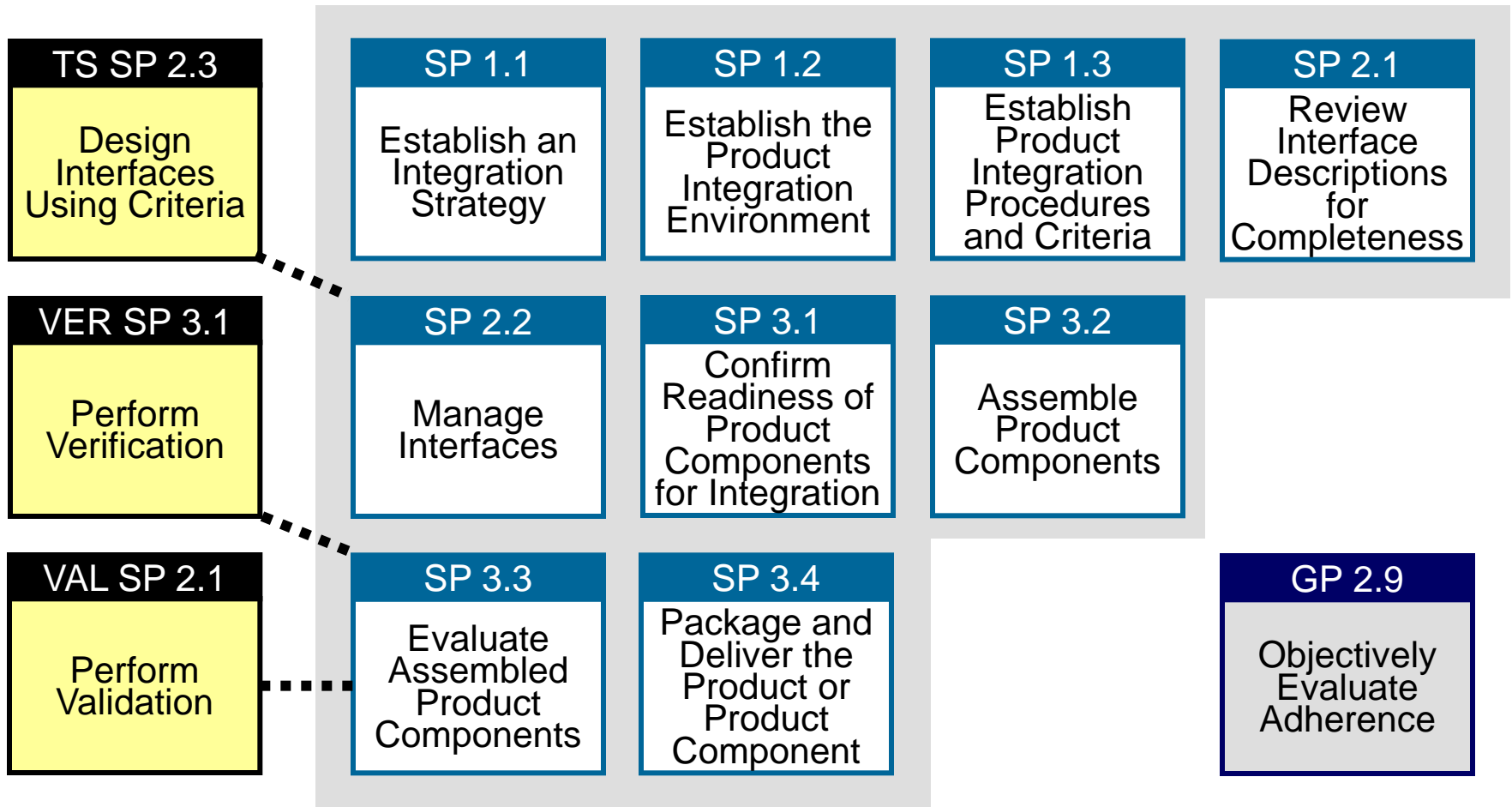
# Product Integration

## Sampling of Work Products



# Product Integration

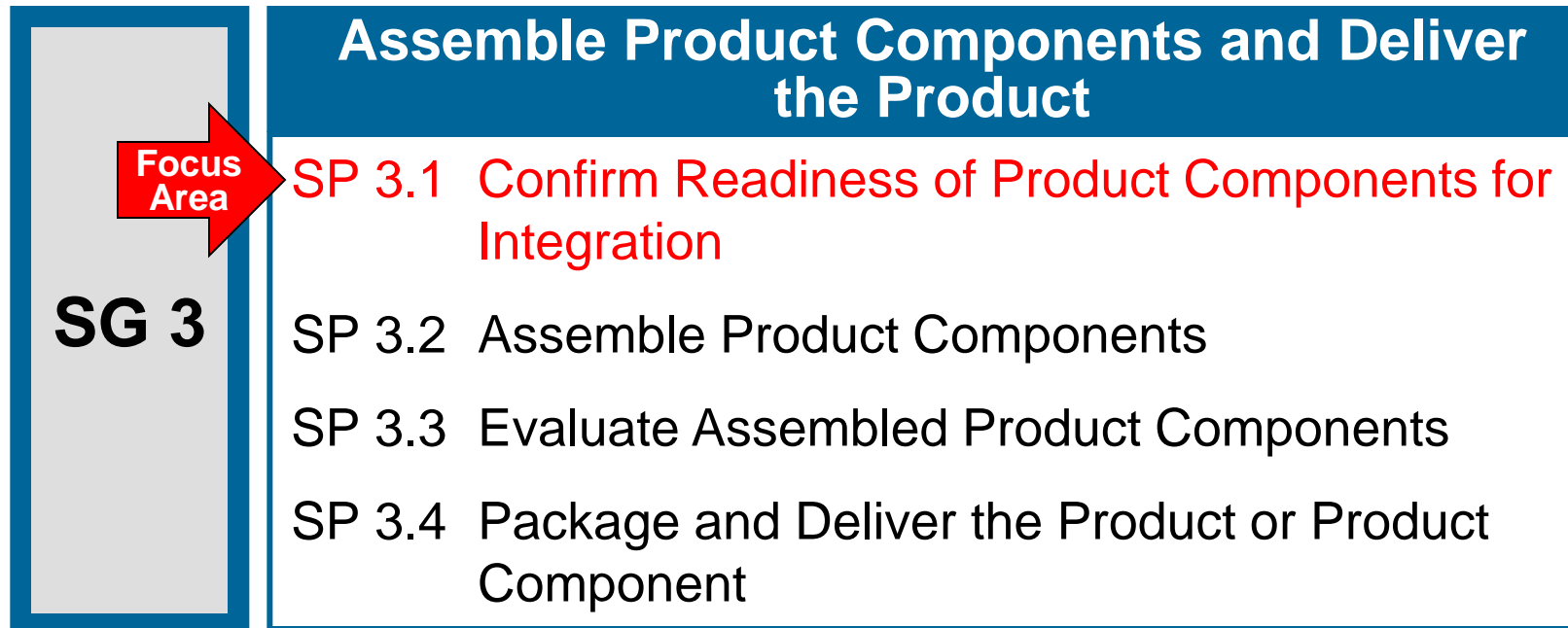
## Sampling of PA and GP Relationships





# Product Integration

## Case Study Example Focus Area



# Rejected Components from Engineering

The integrator confirms that components are ready for integration.

- rejected door sensor software, no peer review proof
- rejected keypad software, COTS not under CM control
- rejected controller software, no proof of unit/component test
- rejected siren hardware, no proof of QA assembly inspection

