Key Benefits of Event-Driven Architecture

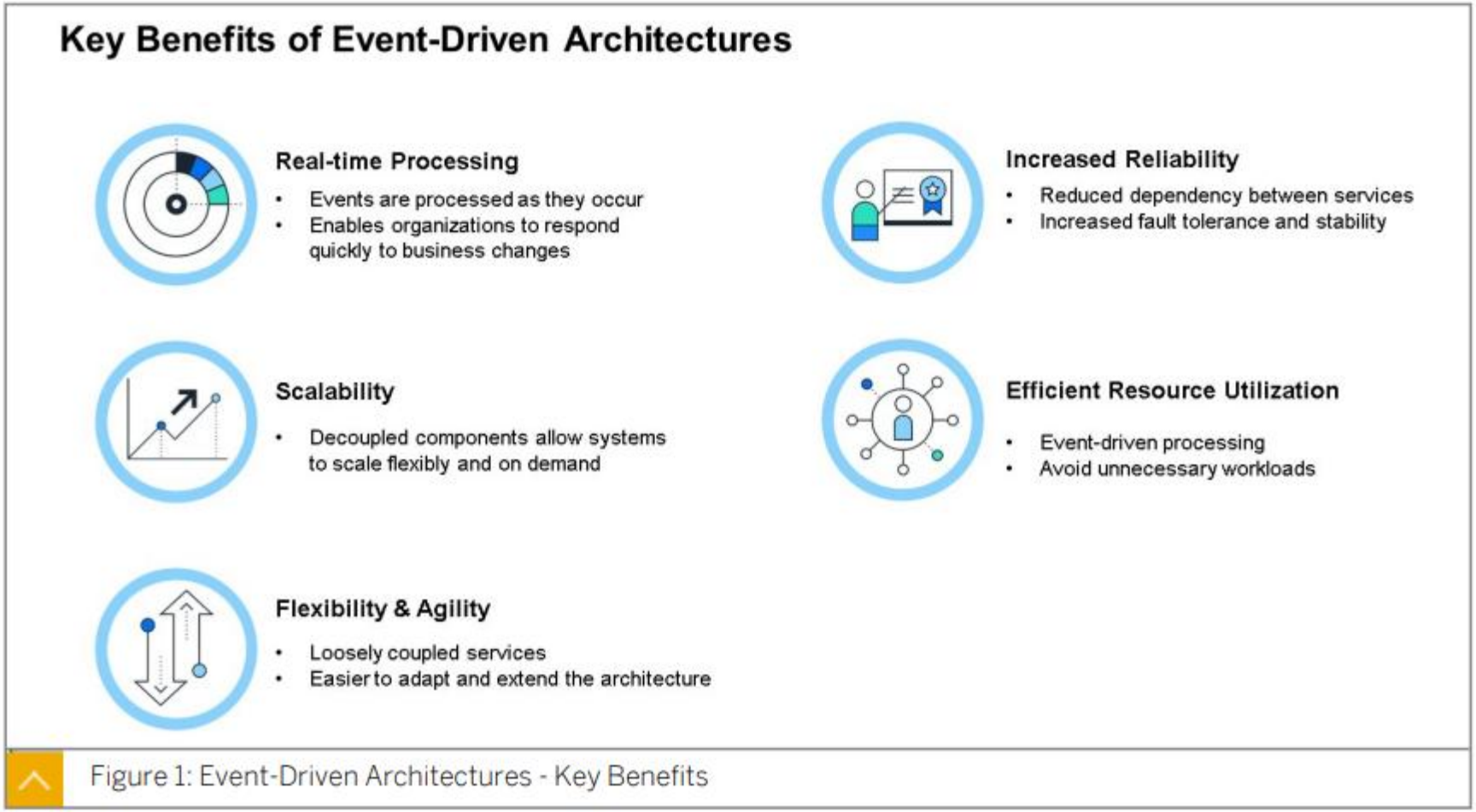


Figure 1: Event-Driven Architectures - Key Benefits

Comparison of the Products Offered

Feature	SAP Event Mesh	SAP Integration Suite, SAP Event Mesh (EMIS)	SAP Integration Suite, Advanced Event Mesh
Functionality	Basic event processing and forwarding	Integration of events within the SAP Integration Suite	Advanced event streaming, management, and monitoring capabilities
Use Cases	Simple integration within the SAP ecosystem	Integration of SAP and non-SAP sources in hybrid landscapes	Complex, large-scale event-driven architectures
Deployment	Cloud-based on SAP BTP	Part of the SAP Integration Suite on SAP BTP	Flexible deployment across various public clouds, on-premises, or edge environments
Data Volume	Supports messages up to 1 MB with 10 GB storage	Matches the specifications of SAP Event Mesh	Supports messages up to 30 MB with up to 6 TB storage
Event Governance & Monitoring	Not supported	Basic integration into the SAP Integration Suite	Comprehensive event governance, design, publishing, and event discovery

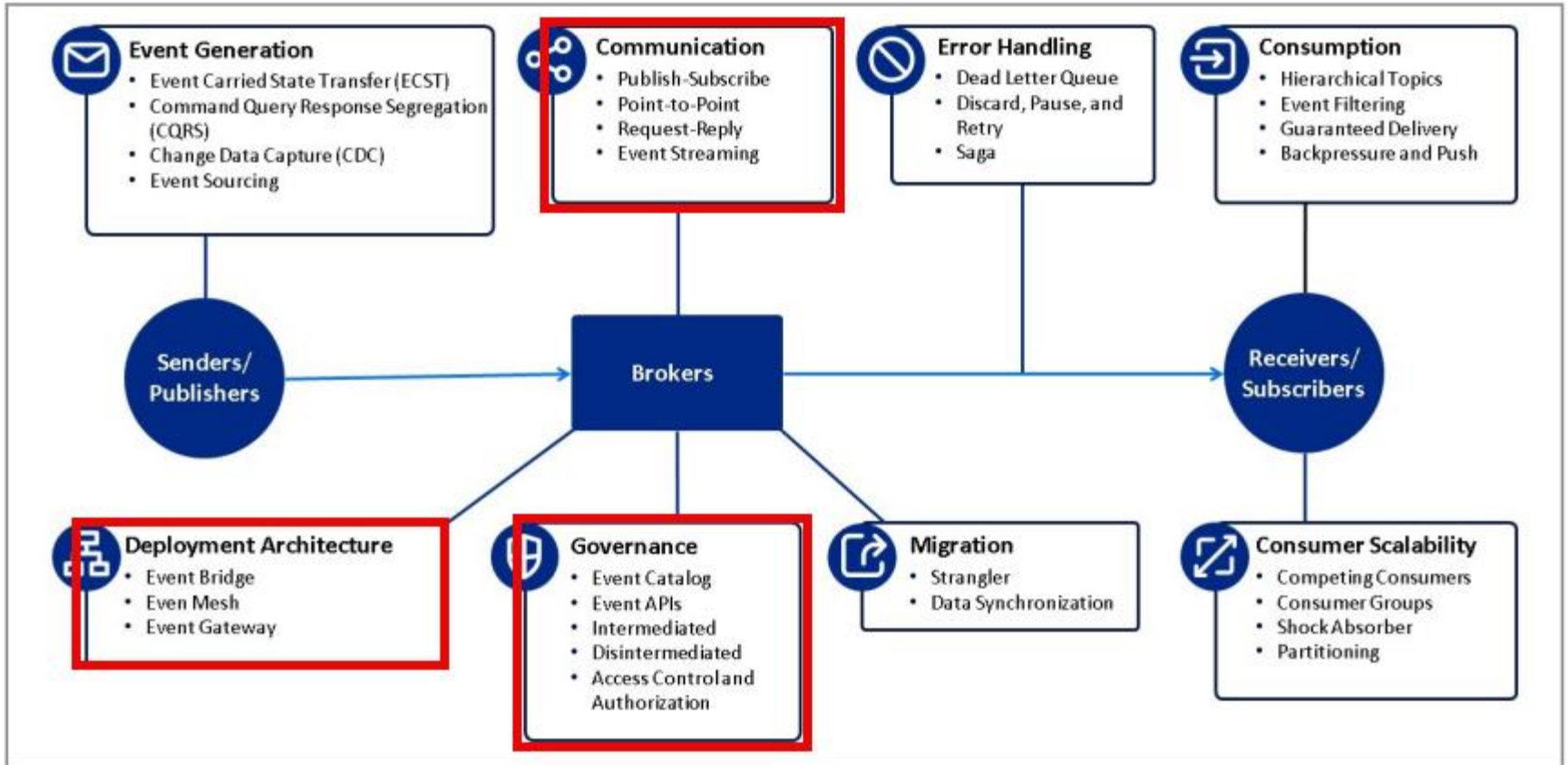
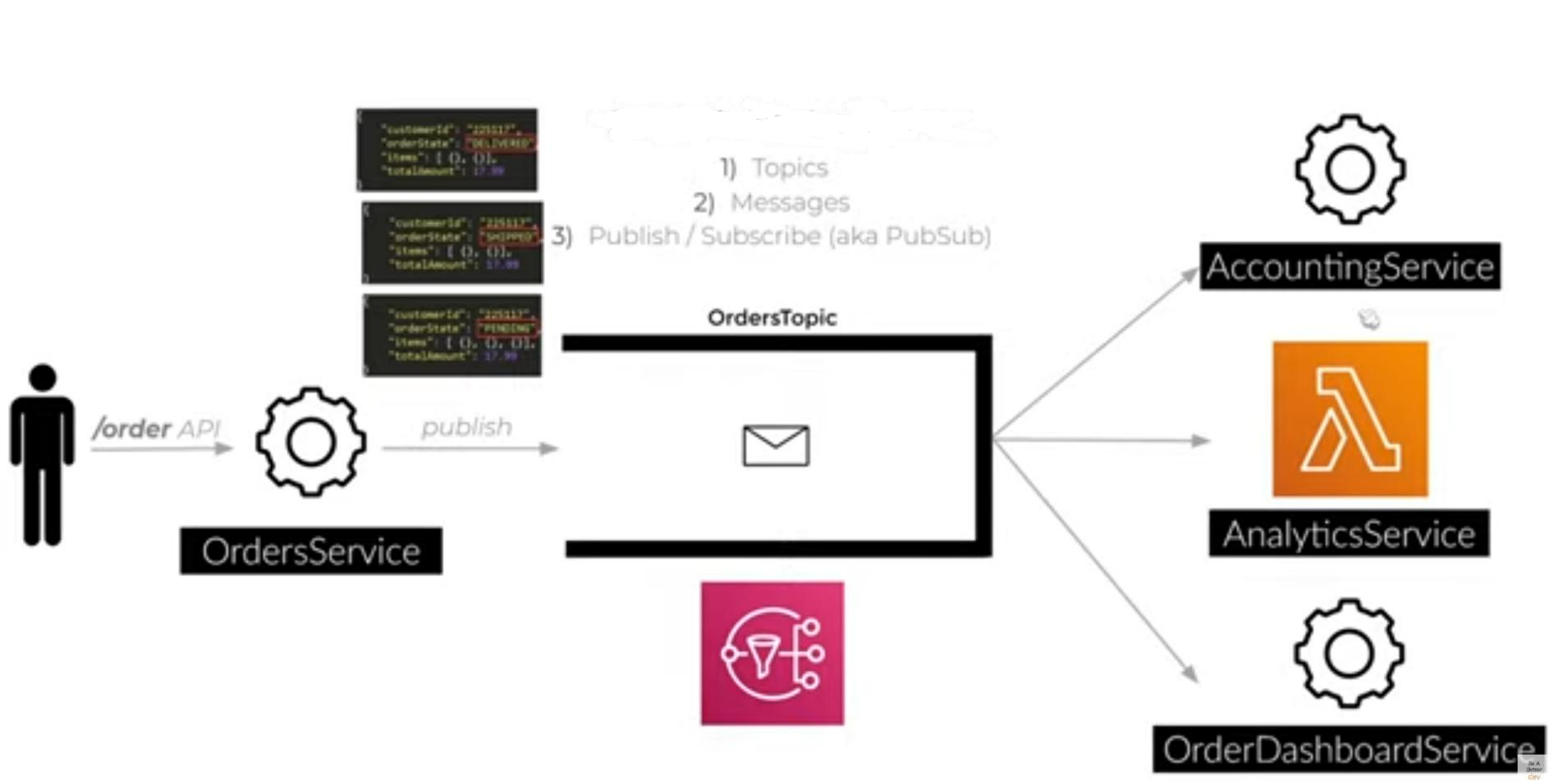
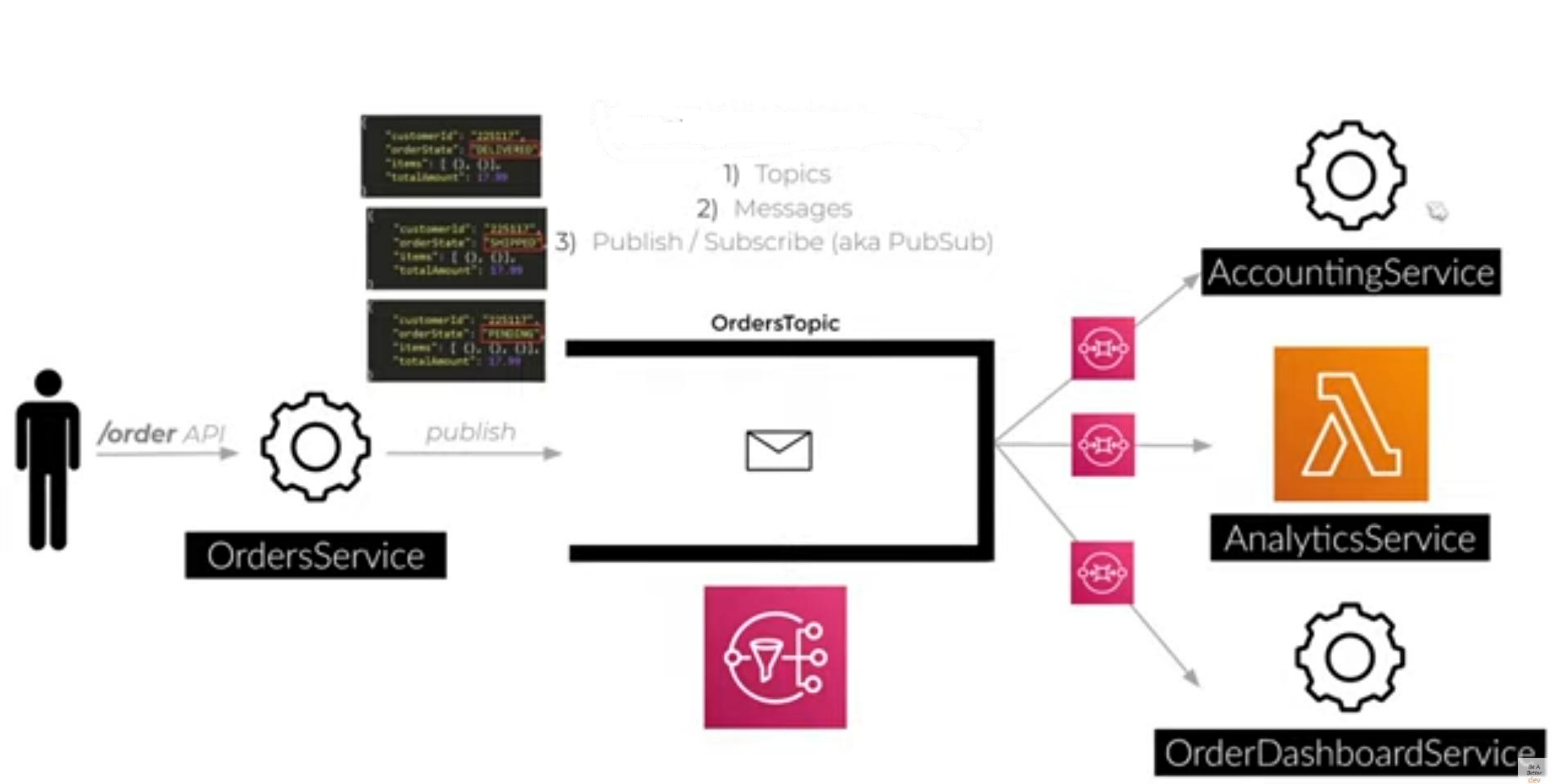


Figure 2: Overview of the Event-Driven Architecture Patterns

What is an Event Broker

- Receives events from publishers and delivers them to subscribers based on predefined rules
- Examples of Event Brokers
  - SAP Integration Suite, Advanced Event Mesh (based on Solace PubSub+)
  - Apache Kafka
  - AWS EventBridge
  - Azure Event Grid


1) Topics
2) Messages
3) Publish / Subscribe (aka PubSub)
OrdersTopic
/order API
publish
OrdersService
AccountingService
AnalyticsService
OrderDashboardService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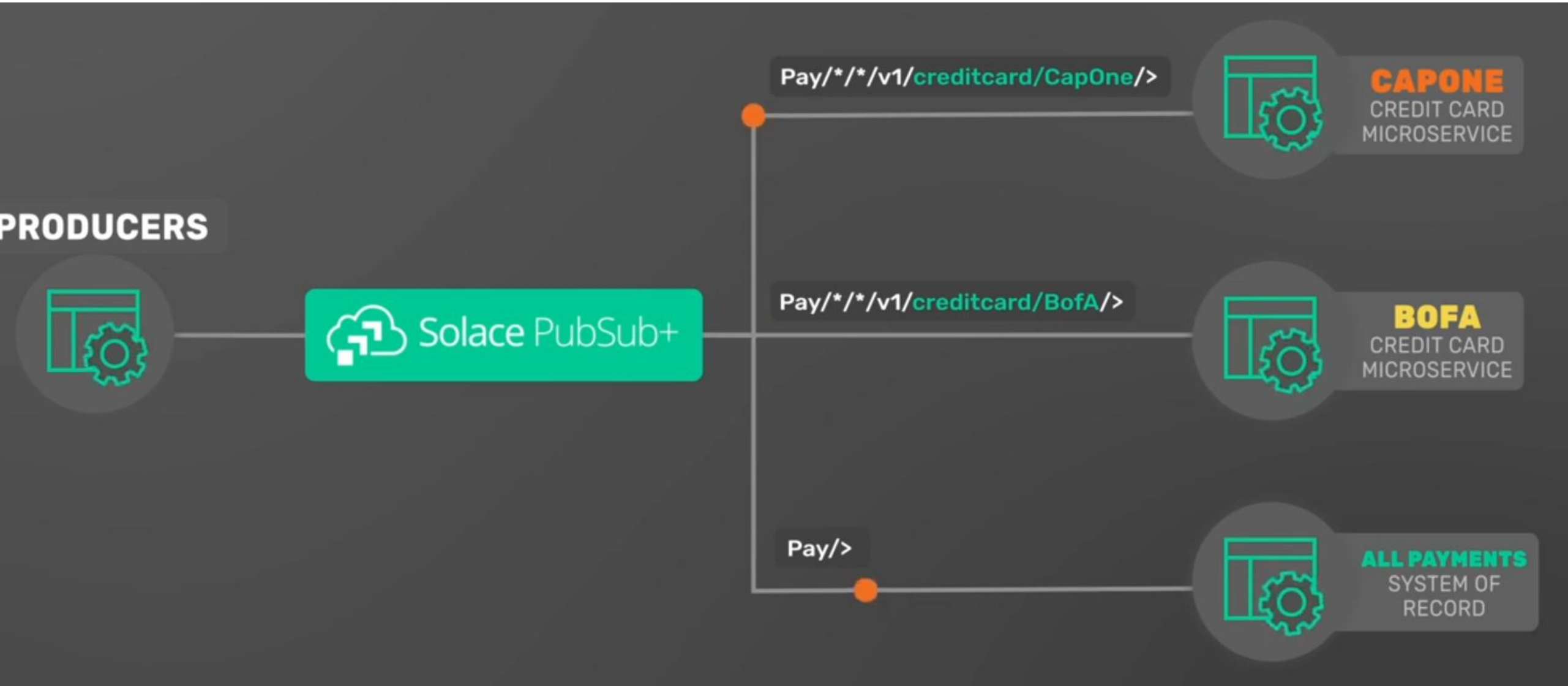
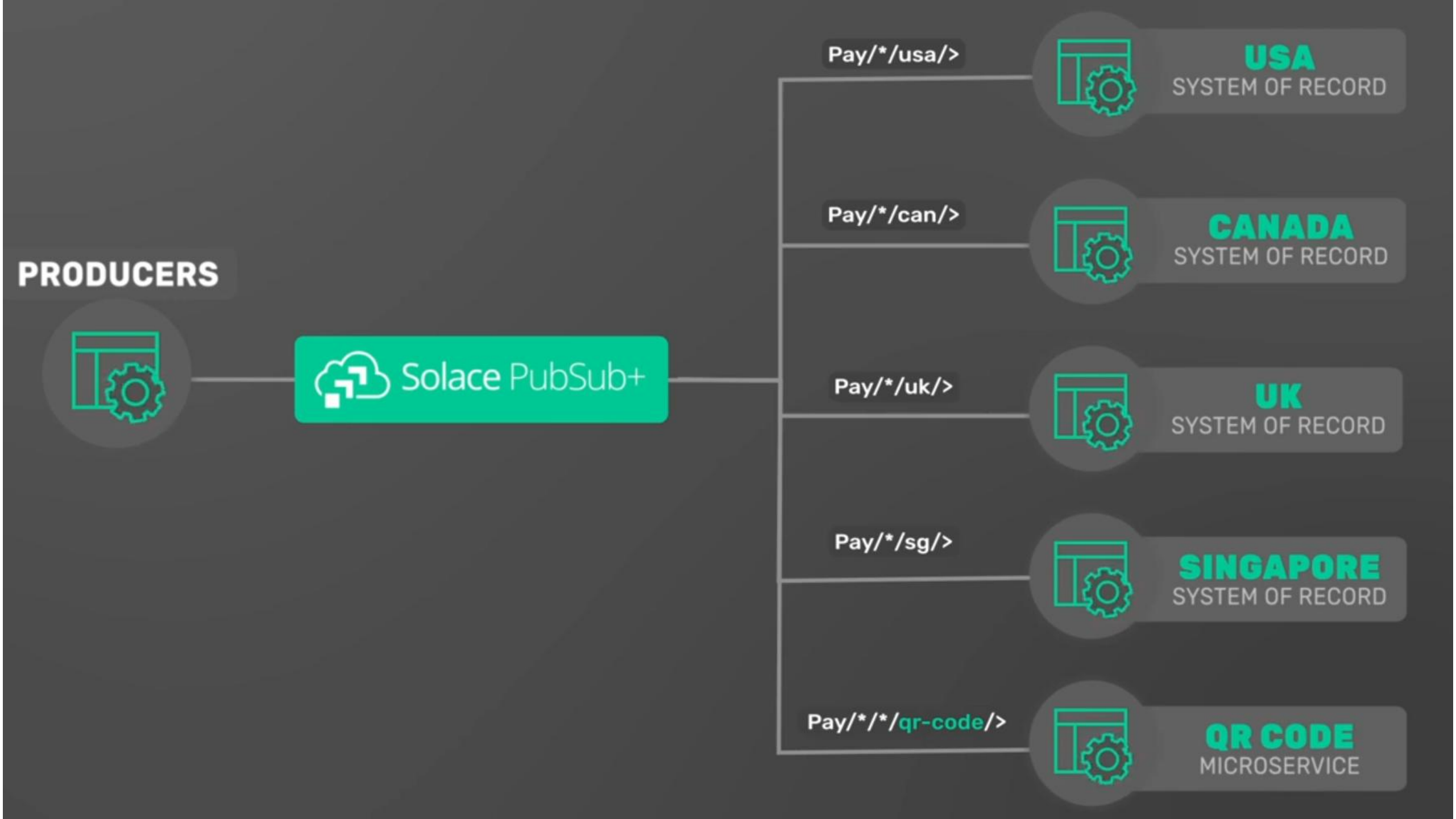
OrdersTopic
/order API
publish
OrdersService
AccountingService
AnalyticsService
OrderDashboardService

Topic Structure for Payments

<app>/<stage>/<country>/<version>/<channel>/
<bank>/<merchant type>/<merchant>

Pay/init/US/v1/creditcard/BofA/Taxi/ComfortCab




PRODUCERS
Solace PubSub+
Pay/*/usa/>
USA
SYSTEM OF RECORD
Pay/*/can/>
CANADA
SYSTEM OF RECORD
Pay/*/uk/>
UK
SYSTEM OF RECORD
Pay/*/sg/>
SINGAPORE
SYSTEM OF RECORD
Pay/*/*/qr-code/>
QR CODE
MICROSERVICE

Broker implemented patterns

Communication

- How messages move between publishers and subscribers through the broker

Deployment Architecture Patterns

- Define how event brokers are deployed and interconnected

Governance Patterns

- Define how events and their usage are documented, secured and standardized

Components	Patterns	Description
Communication	Publish-Subscribe	Multiple recipients can subscribe to an event
	Point-to-Point	Direct communication between 2 parties
	Request-Reply	Event based requests with response mechanism
	Event Streaming	Continuous processing of real time events
Deployment Architecture	Event Bridge	Mediation of events between different systems
	Event Mesh	Fully distributed event network
	Event Gateway	Control of the event flow
Governance	Event Catalog	Cataloging and management of events
	Event APIs	Standardized interfaces for event access
	Intermediated vs. Disintermediated	Control of the interaction between services
	Event APIs	Standardized interfaces for event access
	Access Control and Authorization	Security mechanisms for controlling access

Direct Messaging vs. Guaranteed Messaging

Features	Direct Messaging	Guaranteed Messaging
Best for	• Very high throughput • Low latency • Message loss is acceptable	• Critical business process • No message loss is acceptable • Consumers may be temporarily offline
How it works	• Publisher sends message to topic • Event broker immediately delivers it to active subscribers • Message is lost if subscriber is offline • No delivery acknowledgement is required	• Publisher sends message to topic that is bound to a queue (persistent endpoint) • Event broker stores message in non-volatile memory until subscriber retrieves it • Message remain in the queue until they are acknowledged as processed • Survives broker restarts and consumer downtime

Persistence vs. Durability

Features	Persistence (Message)	Durability (Endpoints)
What it protects	Actual message data	Queue / Subscription itself
Survives broker restart	Yes	Yes (if durable) No (if temporary)
Consumer offline impact	Messages kept until delivered	Messages kept only if endpoint is durable
Main goal	Prevent message loss	Keep endpoint alive and storing data

SAP Integration Suite – Advanced Event Mesh

Key Features

- Distributed Event Mesh
  - Enables event transmission across various applications and cloud environments
- Hierarchical Topics and Event Routing
  - Supports dynamic event routing based on topic hierarchies
- Guaranteed Delivery and Persistence
  - Ensure events are stored and reliably processed
- Multi-Protocol Support
  - Supports MQTT, AMQP, JMS, REST
- Hybrid Integration
  - Compatible with on-premise, cloud, hybrid environments

Feature	SAP Integration Suite: Advanced Event Mesh	SAP Integration Suite: Event Mesh Standalone: Event Mesh
Key Features	• Distributed Event Mesh • Hierarchical Topics and Event Routing • Guaranteed Delivery and Persistence • Multi-Protocol Support • Hybrid Integration	• Event-Driven Communication • Publish-Subscribe Mechanism • Guaranteed Delivery • SAP Integration • Hybrid Connectivity
Supported Patterns	• Hierarchical Topics, Guaranteed Delivery, Event Filtering, Publish-Subscribe, Event Mesh, • Competing Consumers • Integrated governance and security mechanisms • Scalability, fault tolerance, and migration support • Direct and guaranteed messaging • Persistence and durability	• Publish / Subscribe • Point-to-Point
Deployment Options	• On-Premise • Public Cloud • Private Cloud • Hybrid	**SAP Integration Suite: Event Mesh** • Only available within SAP Integration Suite **Standalone: Event Mesh** • Public Cloud
Use cases	• Real time Enterprise Application Integration • IoT and Edge Computing • Scalable Microservices Architecture • Omnichannel Customer Experience • Financial and Transaction Processing	• Enterprise Application Integration • IoT Integration and Edge Computing • Omnichannel Customer Experience • Financial Transactions and Payment Systems