Garanti BBVA Teknoloji

Enterprise Connection Platform

for Banking Applications

Uğur Karaman

Master Expert & Chief Architect

November 2025

Uğur Karaman | Master Expert & Chief Architect

- Uğur serves as Master Expert & Chief Architect at GarantiBBVA Technology. He is recognized as one of the leading experts in the industry in areas such as banking solutions, cash management applications, enterprise integration architectures, microservice-based systems, and open-source integration technologies. He has played a pioneering role in transforming high-volume systems into modern integration platforms, particularly through technologies like Apache Camel, Spring Boot, and Enterprise Integration Patterns.

- In addition to his integration expertise, he also provides technical leadership in AI-powered solutions and data-driven architectural frameworks. He contributes to AI/ML-based projects within the organization, focusing on AI architecture, application architecture, and technical governance processes.

- With international experience in technologies such as Java, Spring, iOS, Android, and modern web frameworks, Uğur brings comprehensive technical depth to his role. He also holds several distinguished certifications, including Meta Certified Developer, Professional Agile Leadership (PAL), and MIT's Generative AI certificate.

Garanti BBVA Teknoloji

Agenda

1.Current Landscape of Enterprise Integrations on Sector
2.Challenges, Expected Impacts & Requirements
3.Patterns & Modern Approaches
4.The Next Generation ECP Solution for Banking Applications

Garanti BBVA Teknoloji

1.Current Landscape of Enterprise Integrations on Sector

Enterprise Integrations | Current Landscape

- Most financial institutions still rely on monolithic and legacy ESB-based architectures.
- BizTalk, IBM App Connect, or custom Java applications are still in production across the sector.
- Integration platforms are often centralized, tightly coupled, and license-dependent.
- Rapid growth in API-based and event-driven models.
- Increasing need for hybrid architectures (On-prem + Cloud).

2.Challenges, Expected Impacts & Requirements

Enterprise Integrations | Challenges & Concerns

- **Legacy & Monolithic Architectures**: Most enterprises still rely on legacy ESB or point-to-point Java integrations that are difficult to scale or modernize.These systems follow monolithic or centralized models, limiting agility and modularity.Integrations are tightly coupled, making maintenance and versioning costly.

- **Vendor Lock-in and Platform Constraints:** BizTalk and IBM App Connect are license-based and proprietary, creating vendor dependency.End-of-Support (EoS) timelines (e.g., BizTalk 2028) pose strategic risks.Limited interoperability with open-source ecosystems and cloud-native frameworks (like Camel / Kubernetes).

- **High Maintenance and Operational Costs:** Complex installation and configuration processes.Manual deployments and limited CI/CD integration. High cost of ownership due to license renewals, infrastructure overhead, and dedicated skill requirements.

- **Lack of Flexibility & Scalability:** Legacy integration tools are designed for one-to-one or one-to-many synchronous patterns, not modern event-driven or async messaging.Difficult to support hybrid cloud or multi-protocol environments (e.g., Kafka, gRPC, REST, SFTP, MQ).Limited support for auto-scaling, microservice, or serverless deployment models.

- **Skill & Resource Constraints:** Requires specialized expertise (.NET, App Connect, or old Java frameworks).Talent availability is declining for legacy technologies.Knowledge silos slow down development and onboarding of new teams.

Enterprise Integrations | Expected Impacts

- Improved Time-to-Market
- Operational Efficiency.
- Enhanced Scalability.
- Increased Reliability.
- Cost Optimization.
- Customer & Partner Satisfaction.

Enterprise Integrations | Technical Requirements

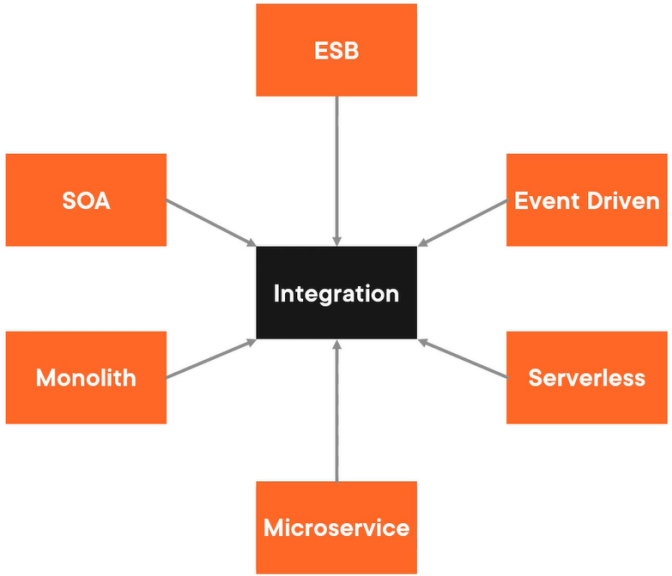
- Microservice & Event-Driven Architecture: Designed for asynchronous, decoupled communication (Kafka, gRPC, REST).
- Cloud-Ready & Hybrid Support: Must support on-premises and cloud-native deployments seamlessly.
- Open Source & Vendor Independence: Based on open standards (Apache Camel, Quarkus, Kubernetes).
- Security & Compliance: Alignment with enterprise-grade authentication, encryption, and monitoring policies.
- Observability & Monitoring: Built-in logging, tracing, and operational dashboards for real-time visibility.
- Low-Code / No-Code Capability: Simplified flow creation with tools like Kaoto and Kamelets for faster delivery.
- Spring Compatibility: Fully integrated with existing Spring Logging, Monitoring, Security, and CI/CD frameworks.

Garanti BBVA Teknoloji

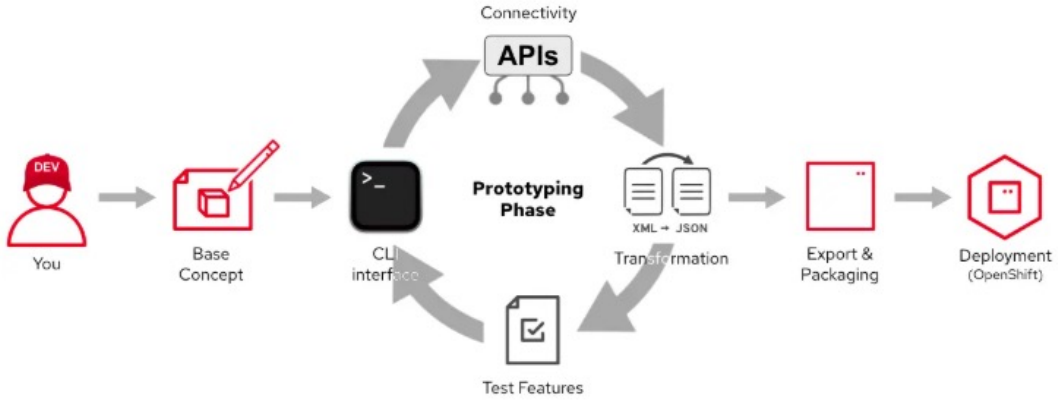
3.Patterns & Modern Approaches

Enterprise Integrations | Common Cross Cutting Concern

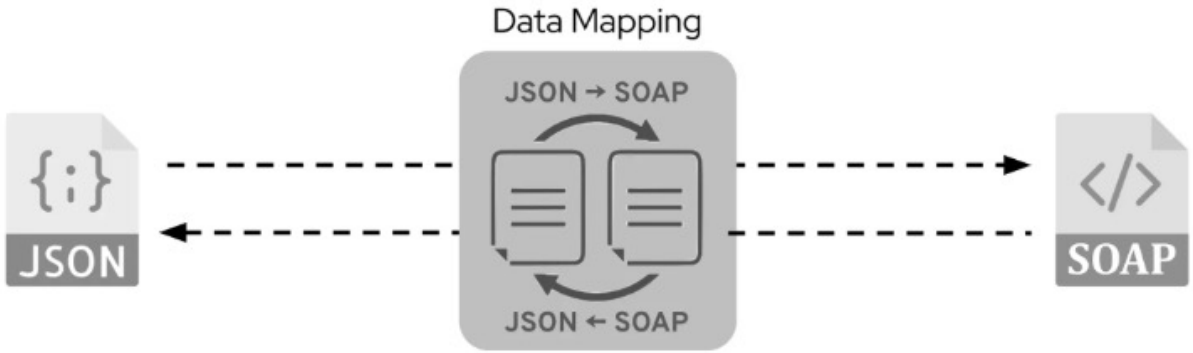
- Applies **Enterprise Integration Patterns** (EIPs) to standardize and simplify integration processes.
- Aims to streamline data flows and make integration processes more consistent and manageable.
- Enables communication across heterogeneous systems in various formats and protocols.
- Provides data and message transformation between different corporate service formats.
- Regardless of evolving architectures — Monolith, SOA, Microservices, Event-Driven, or Serverless —integration always remains a common cross-cutting concern. **The new Enterprise Connection Platform (ECP) is designed to eliminate this concern**.



Enterprise Integrations | Camel

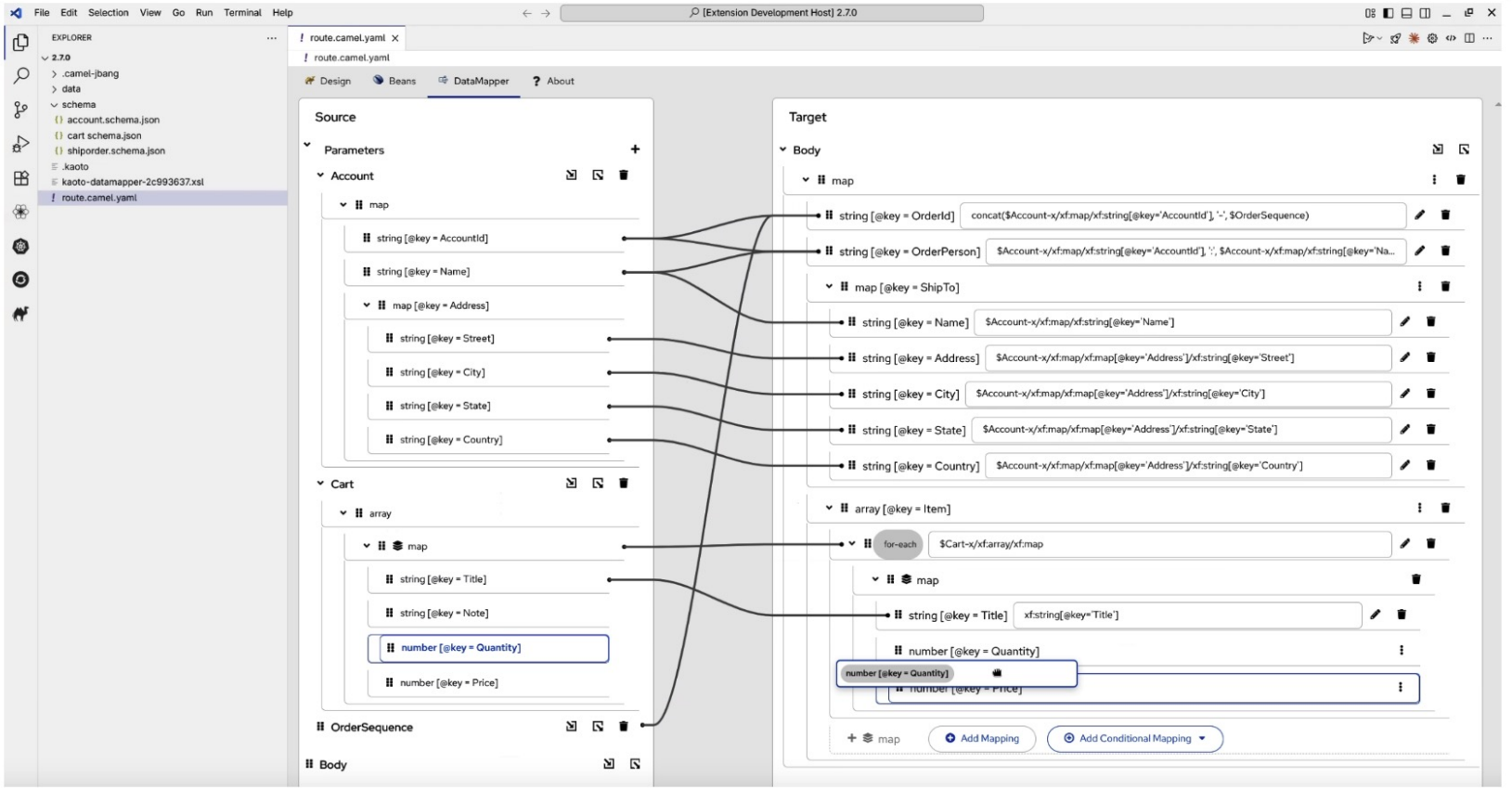


Enterprise Integrations | Camel on Quarkus



Enterprise Integrations | Camel on Spring Boot

Enterprise Integrations | Kaoto Low-Code Schema Mapping



Garanti BBVA Teknoloji

4.The Next Generation
ECP Solution For Banking Applications

ECP Solution | Integration Required Banking Applications

- Salary,
- Invoice,
- Bulk International Transfers,
- Account Statement,
- E-Invoice,
- Direct Debit System,
- Supplier Financing System,
- Bulk Domestic Transfers,
- MTV Payments,
- Bulk Foreign Currency Transfers,
- Stock Financing System,
- SGK Payments,
- GSM TL Payments,
- Games of Chance Payments,
- Tax Payments,
- Donation Payments.

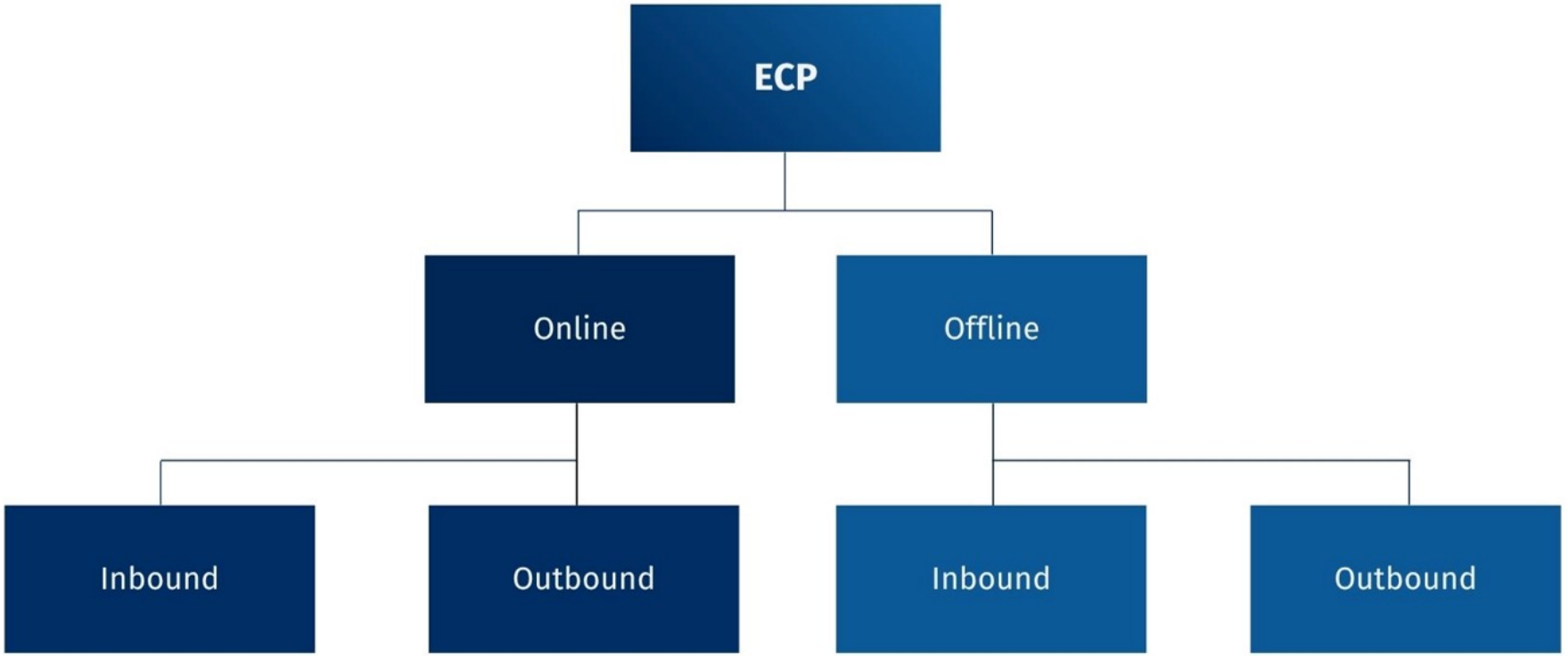
ECP Solution | What's ECP?

- A Central, Secure and Adaptive **Integration Platform** for the **Enterprise**.
- Enabling Seamless Data and Workflow **Orchestration** across **Enterprise Systems**.

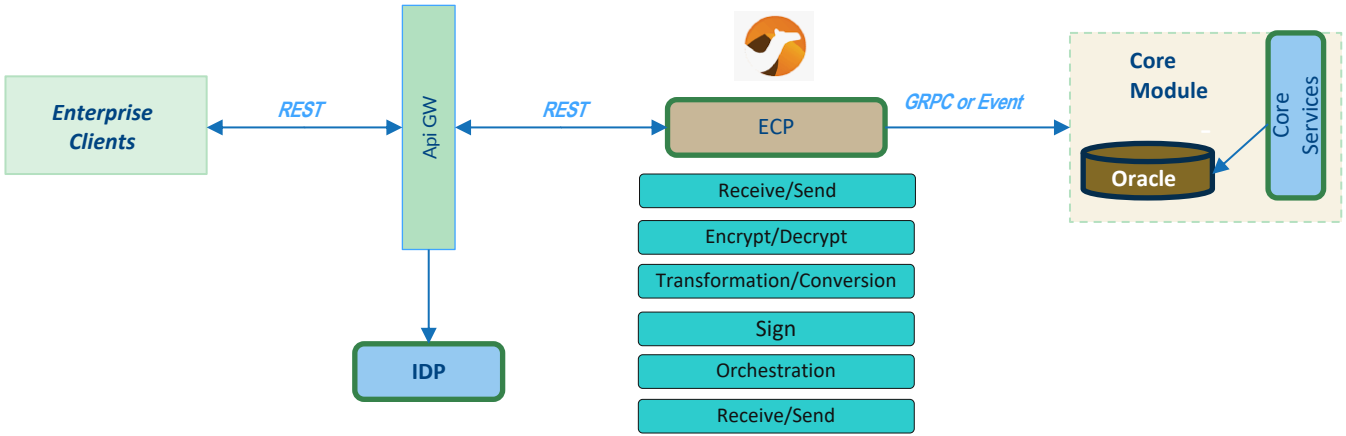
Technical Fundamentals

- **Spring Framework:** Provides a modular and scalable enterprise-grade spring base infrastructure.
- **Apache Camel:** Manages integration flows and protocol orchestration.
- **Supported Channels:** REST · gRPC · FTP · SFTP · Email · Message Queue · SOAP

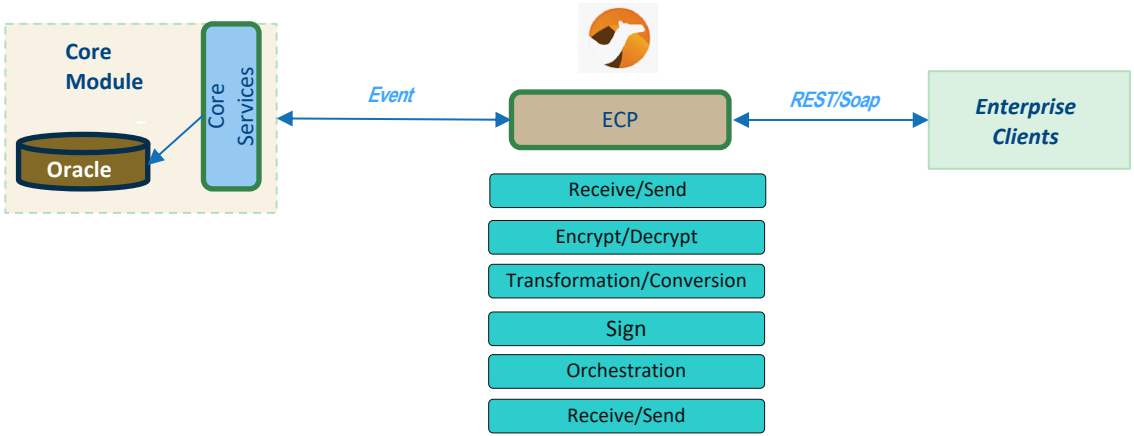
ECP Solution | Integration Flow Types



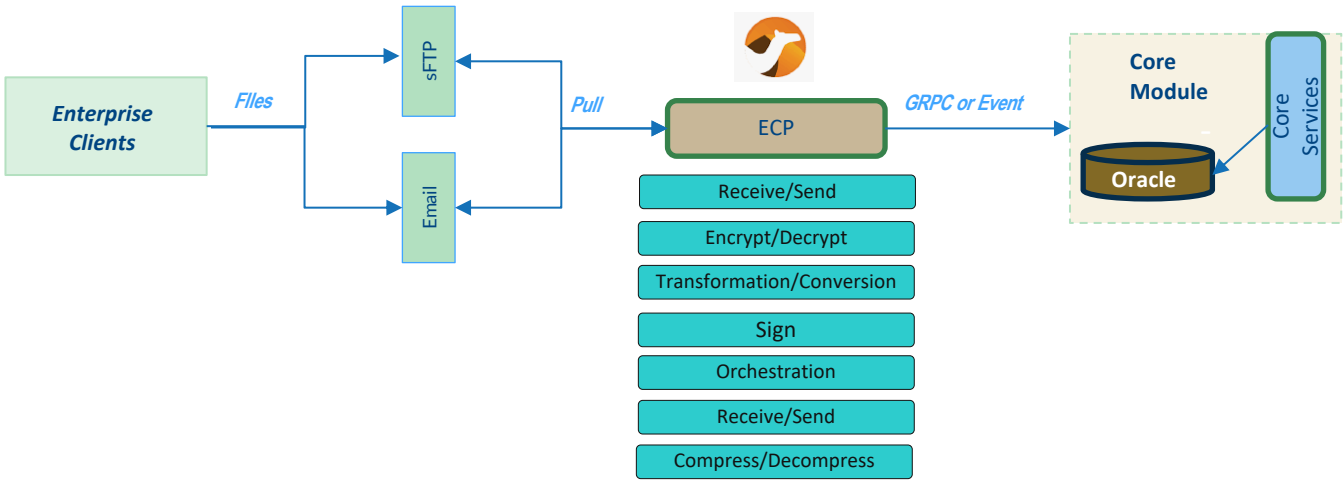
ECP Solution | Online Inbound



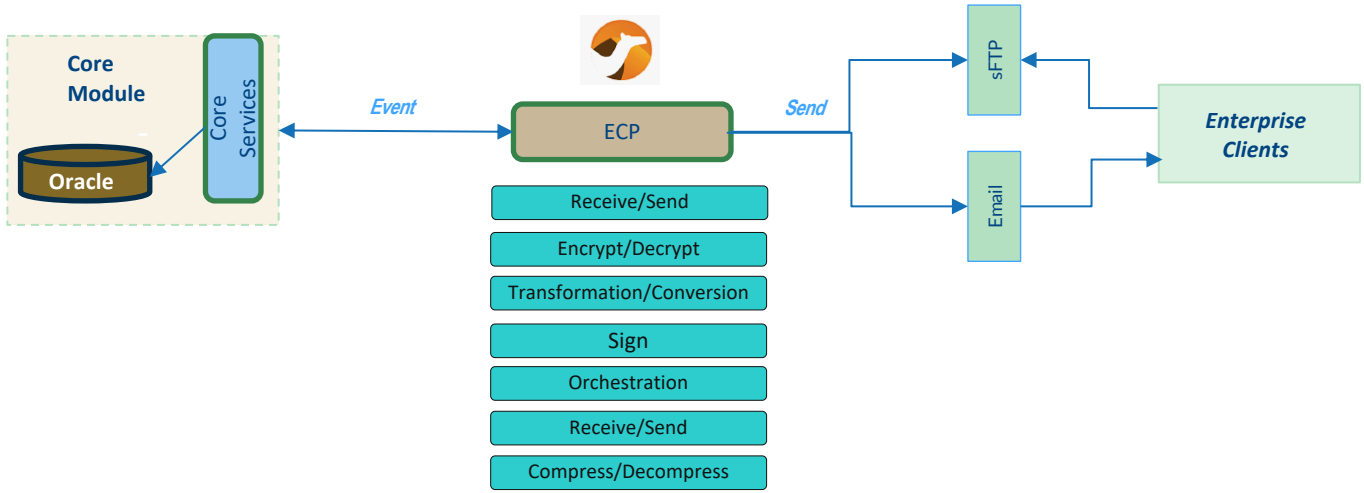
ECP Solution | Online Outbound



ECP Solution | Offline Inbound



ECP Solution | Offline Outbound



Garanti BBVA Teknoloji

Thanks