BIAN Webinar

“Creating BIAN’s Financial Industry Data Model"

June 8th, 2020
A Warm Welcome to YOU – Dialing in From all around the globe!
On Today’s Webinar

• Hans Tesselaar
  BIAN Executive Director

• Patrick Derde
  BIAN Architect
Introduction | Mission

To provide the world with the best banking interoperability architecture. To be the banking technology standard.

Central objectives for IT in the banking industry are to lower the IT and operational costs of the bank and help banks mitigate the risks associated with technology innovation. To provide a trusted roadmap for constant innovation.

By collaborating and sharing in an open way, the best expertise across our global ecosystem of leading banks, technology providers, FinTech players, academics and consultants to define a revolutionary banking technology framework that standardizes and simplifies the overall banking architecture.
| Introduction | BIAN & Financial Institutions |

| ochmeo | BCP | BB&T | CIBC | citi | FIRST HORIZON | JYSKE BANK | GreaterBank | JPMorganChase |
| KB | M&T Bank | PNC Bank | Santander | Societe Generale | SunTrust | Swedbank | UOB |
| usbank | WELLS FARGO | | | | | | | |
Introduction | BIAN & Academic, Standard Bodies and Training Partners

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<td>ISO</td>
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| Business Architecture Guild |

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BIAN – Banking Industry Architecture Network - Framework

- Business Capability Map
- Service Domain Landscape
- Business Scenarios
- Data Models
- Semantic APIs
- BIAN
- Agile Digital Bank
- White Papers & Guidelines
- www.bian.org
- Portal.bian.org
- Certification
- Training
BIAN Reference Architecture
Abstract Metamodel – Architecture Layer view
Objectives

- Introduction in the BIAN approach of creating Financial Industry Data Models.

- which is a combination of 4 modeling patterns resulting in data models that are consistent from the perspective of structure and content.

- Explain how BIAN is making a strict distinction between
  - “things” with its attributes and “information” about the things
  - The “model” and the “diagrams”

- Illustrate the methodology briefly by BIAN examples
  - Corporate Loans
  - Current Account

- Positioning the “Control Record” information models and the “BIAN Business Object Model”.
BIAN Financial Industry Data Model

- From Data to Wisdom ... Data, information, knowledge, wisdom

- BIAN will facilitate Financial Industry stakeholders to exchange financial Industry information and information services
  - BIAN Data Model that concentrates on Foundational Information Building Blocks (Business Objects) and Derived Information Building Blocks (Control Records)
  - BIAN concentrates on meta-data i.e. the meaning and structure of data and information

- Objectives
  - Common vocabulary with unambiguous definitions, which can be used as the esperanto to enable translation of financial concepts between different user communities (semantic community versus speech community)
  - Applying Common basic data model structures
  - Enable data interoperability (Open Data)
  - ...

- Requirements
  - A standard set of elemental business objects
  - A standard set of data model patterns
  - IT and Organization Agnostic
  - A strict methodology
BIAN Financial Industry Data Model
BIAN IN THE CONTEXT OF OTHER STANDARDS

- FIBO
- ISO20022
- IFRS
- IAS
- FIX
- XBRL
- FDX
- PSD2
- GDPR
- Other Finance Standards
BIAN Business Object Modeling

Way of Thinking and Modelling
Everybody sees (understands) the same?
Problem Statement?
A model is abstraction of reality
Reality is for everybody the same, how it is seen is different
→ different people model reality differently

Challenge?
Provide a method that guide modelers to model reality in such a way that they all come up with the same model
Basic Object Modeling Principles

- Model Real world things
  - detect real world objects (e.g. Party, Loan Agreement)
- Model View on reality
  - Business information is combining data about objects in relation to other objects to make it meaningful to communicate (e.g. Documents, screens, electronic messages, overviews, reports, ...)
  - subset of things (e.g. Consumer loans)
  - collection of things (e.g. Securities portfolio)
- Defining before Naming
- Pattern Based Modeling
Information Architecture Modeling in a nutshell

**Scope:**
- Information Modeling
- Administrative Systems

**4 Patterns:**
1. Term-Concept Pattern (SBVR)
2. Concept Model Pattern (ERD)
3. Concept Classification Pattern
4. Business Object Model Pattern

**Process:**
1. What is the concept represented by a term?
2. What is the type of concept?
3. If the concept is an object, what type of object is it?
4. Apply Concept Model Pattern.
1) I describe “something” What does it mean? Synonyms ? Homonyms

2) What is the type of concept?

3) Am I describing a business Object?

4) What is the type of Business object?

5) How do I model the concept related to other concepts?

6) What are the concept Characteristics?
Terms & Definitions (SBVR)

Every Business Concept
- is named by a business term.
- is accompanied by a definition.

Business Glossary:
The set of business terms accompanied by their Definition(s) in context.

Example:
- Business Term: Party,
- Business Concept: Actor
- Business Definition:
  1) Party is an entity involved in an activity (ISO20022 Business Glossary)
  2) Party is a Person (human being) or an Organisation (BIAN Business Glossary)
Terms & Definitions (SBVR)

Homonym or Synonym?

Example Synonym:
- Business Term: Party, Person, Actor
- Business Concept: Actor
- Business Definition:
  1) Party is an entity involved in an activity (ISO20022 Business Glossary)
  2) Party is a Person (human being) or an Organisation (BIAN Business Glossary)
Homonym?

Example Homonym:
- Business Term: Party
- Business Concept: Actor
- Business Definition:
  1) Party is an entity involved in an activity (ISO20022 Business Glossary)
  2) Party is a Person (human being) or an Organisation (BIAN Business Glossary)

Example Homonym:
- Business Term: Party
- Business Concept: Event
- Business Definition:
  1) A social event at which a group of people meet for conversation, refreshments, entertainment etc.
Discovering Guidelines for Defining Terms

12 Commandments for Defining Terms

1. A term definition shall be stated in the singular.
2. A term definition shall state what the concept is, not what it is not.
3. A term definition shall be stated as a descriptive phrase or sentence(s) targeted at the audience.
4. A term definition shall contain only commonly understood abbreviations.
5. A term definition shall be expressed without embedding definitions of other data or underlying concepts.
6. A term definition shall state the essential meaning of the concept.
7. A term definition shall be complete, precise and unambiguous.
8. A term definition shall be brief and comprehensive.
9. A term definition should be reversible and able to stand alone.
10. A term definition should be expressed in a time, place and usage independent way by avoiding embedding of rationale, functional usage, or process information.
11. A term definition should ensure both external and internal consistency.
12. A term definition should avoid circular reasoning.

12bis A term definition should not reuse the definiendum within the definiens.
Concept Classification Pattern:

What Information Concept Types to distinguish?

A concept is "whatever you can think of".

This is too abstract to get grip on the type of information that has to be modeled.

There is a need to distinguish the concepts from an Information technical point of view.
Concept Model Pattern (ERD)

For each business concept we ask:

- What is the **definition**?
- What are the **Business Concept Types (classification)**?
- What are the **descriptors**? identifiers, life cycle status, other attributes
- What are the **relations with other business concepts**?
Concept Model Pattern: Example

Customer
- As an object?
- As a Classification?
- As a Relationship?
What is Business Object?

- A Business Object focuses on a THING in reality.
  - Business Object could be a tangible thing (e.g. human being, a location, a building, etc.) or an intangible thing (e.g. a loan agreement, a price arrangement, a payment instruction, a current account, etc.)

- A Business Object has intrinsic characteristics by nature.
  - These characteristics are behavioural/functional or descriptive. The descriptive and the behaviour characteristics are independent from the context into which an object behaves.

- A Business Object can be classified according to multiple viewpoints, because different stakeholders look at business object differently.
  - A Functional Classification is a mechanism to classify objects from the perspective of functional interest.
  - A Taxonomical Classification is a mechanism to classify objects from the perspective of the nature of object.
Business Object Model Pattern:
What Business Object Types to distinguish?
Business Object Model Pattern:
What are Business Objects in Banking?

Content Pattern

- **Agreement**
  - Party
  - Agreement
  - Arrangement

- **Product**
  - Product
  - Service

- **Fulfillment**
  - Instruction
  - Transaction

- **Bookkeeping**
  - Account
  - Account Entry

- **Additional Objects**
  - Location
  - Time
  - Event
  - Channel
  - Document
What are Business Objects in Banking?

Banking Product:
A package of banking services, accompanied by terms and conditions, offered to the market.

Banking Product Classification:
- Account Products
  - Current Account
  - Saving Account
- Loan Products
  - Personal Loan
  - Mortgage Loan
  - Student Loan
  - Home equity loan
- Card Products
  - Debit Card
  - Credit Card

Banking Product Relationship:
- Product/Party Relationships
  - Party owns Product
  - Party sells Product
  - Party buys Product
- Product/Agreement Relationships
  - Product Sell Agreement
  - Product Purchasing Agreement
  - Product Maintenance Agreement
- Product/Product Relationship
  - Product is composed of Product
  - Product is alternative for Product
  - Product is replaced of Product
- Product/Location Relationships
  - Product is sold at Location
  - Product is promoted at Location
  - Product is Launched at Location
What are Business Objects in Banking?

**Agreement:**
A formal or informal common understanding between two or more (legal competent) parties concerning one or more subject matters expressed in a set of arrangements, terms and conditions.

**Agreement Classification:**

- **Product Agreements**
  - Current Account Agreement
  - Loan Agreement
- **Transaction Agreement**
  - Purchase Agreement
  - Sales Agreement
  - Collateral Agreement
  - Leasing Agreement
  - Maintenance Agreement
- **Party Involvement Agreement**
  - Employee Agreement
  - Customer Agreement
  - Supplier Agreement
  - Third Party Agreement

**Agreement Relationship:**

- **Agreement/Party Relationships**
  - Party is Customer in Agreement
  - Party is Supplier in Agreement
  - Party is Guarantor in Agreement
- **Agreement/Agreement Relationships**
  - Agreement is Amendment to Agreement
  - Agreement is Collateral to Agreement
  - Agreement is Warranty for Agreement
- **Agreement/Location Relationships**
  - Agreement is Signed at Location
  - Agreement is Subject to laws of Location
  - Agreement is Valid at Location
What are Business Objects in Banking?

**Arrangement:**
A promise between two or more parties to do something, not to do something, to give something or not to give something.

**Arrangement Classification:**
- Specific Banking Service Arrangements
- Information Service Arrangements
- Fee Arrangements
- Pricing Arrangements
- Discount Arrangements

**Arrangement Relationship:**
- Arrangement/Party Relationships
  - Party is creditor in Arrangement
  - Party is debtor in Arrangement
  - Party is guarantor in Arrangement
- Arrangement/Agreement Relationship
  - Arrangement is part of Agreement
  - Arrangement is changed via Agreement
- Arrangement/Arrangement Relationship
  - Arrangement terminates Arrangement
  - Arrangement depends on Arrangement
What are Business Objects in Banking?

**Party:**
A party represents an autonomous entity in which a bank has a business interest. It has a legal definition and identity. A party is a Person or Organization.

**Party Classification:**
- Individual
  - Marital Status Classification
    - Married
    - Single
    - Divorced
  - Gender Classification (taxonomical)
    - Male
    - Female
- Organisation
  - Organisation Type Classification
    - Financial Institution
    - Non-Financial Institution

**Party Relationship:**
- Party/Agreement Relationships
  - Party is Customer in Agreement
  - Party is Supplier in Agreement
  - Party is Guarantor in Agreement
- Party/Location Relationship
  - Residential Address
  - Post Address
  - Place of Birth
  - Work Address
What are Business Objects in Banking?

**Instruction:**
A request to do something.

**Instruction Classification:**
- Payment Instruction (Invoice, Cash Receipt, Bill, Expense Note, …)
- Delivery Order
- Information Request
- Exchange Instruction
- Allocation Instruction

**Instruction Relationship:**
- Instruction/Arrangement Relationship
  - Instruction is request to fulfill Arrangement
  - Instruction is request to change Arrangement
- Instruction/Party Relationship
  - Party is Requestor of Instruction
  - Party is Receiver of Instruction
- Instruction/Event Relationship
  - Instruction Due Date
  - Instruction Receipt
  - Instruction Sent
  - Instruction Fulfilled
What are Business Objects in Banking?

**Transaction:**
A planned or performed action in the context of concluding or fulfilling an agreement.

**Transaction Classification:**
- Payment Transaction
- Delivery Transaction
- Sale Transaction
- Financial Transaction
- Banking Transaction

**Transaction Relationship:**
- Event/Agreement Relationship
  - Event fulfills Agreement
  - Event ends Agreement
  - Event cancels Agreement
- Event/Party Relationship
  - Event is initiated by Party
  - Event is approved by Party
  - Event is executed by Party
- Event/Event Relationship
  - Event follows Event
  - Event triggers Event
  - Event causes Event
What are Business Objects in Banking?

**Account:**
A measuring state on which movements in value or amounts of assets, rights and obligations are registered.

**Account Classification:**
- Debit Account
- Credit Account
- Vostro/Nostro Account
- Payment Account
- Settlement Account

**Account Relationship:**
- Account/Account Relationship
  - Account is aggregated into Account
  - Account is centralized onto Account
  - Account is sub account of Account
  - Account is Collective Account of Account
- Account/Party Relationship
  - Party is owner of Account
  - Party is servicer of Account
  - Party has power of attorney to Account
- Account/Instruction Relationship
  - Account is Beneficiary Account in Transaction
  - Account is Payment Account in Transaction
  - Account is Debit Account in Transaction
  - Account is Credit Account in Transaction
What are Business Objects in Banking?
Banking Product Definition >>> Example: Loan Product

Example:
- Product Agreement
- Banking Product or Service
- Product Feature
  - Product Terms and Conditions
  - Product Service
- Product Service Modality

Example:
- Service Pricing Formula
- Service Fees/Penalties Formula

- Pricing Feature
- Fee Feature
- Re-Payment Feature
- Withdrawal Feature
- Penalty Feature
- Cancellation Feature
- Termination Feature
What are Business Objects in Banking?
Banking Agreement Management >>> Example: Loan Agreement

- **Party**
  - **Agreement Involvement**
    - **Agreement**
      - **Contract**
    - **Condition**
    - **Arrangement**

**Example:**
- Borrower
- Lender
- Guarantor

**Example:**
- Payment Arrangement
- Repayment Arrangement
- Interest Arrangement
- Collateral Arrangement
- Fee/Charge Arrangement
- ...
What are Business Objects in Banking?
Fulfillment Management >>> Example: Payment Execution

- Example: Payment Instruction/Invoice
- Example: Payment Transaction
What are Business Objects in Banking?
Bookkeeping and Accounting >>> Example: Record Payment in Accounting

- Debit/Credit Account
- Pricing Account
- Payment Transaction
- Accounting Transaction
- Invoice
Corporate Loan BOM Diagram
Corporate Loan Control Record Diagram
Extract from Corporate Loans

BIAN Reference Architecture
Abstract Metamodel – Layered view
<table>
<thead>
<tr>
<th>Attribute Category</th>
<th>Elements</th>
<th>Description</th>
<th>BIAN ID</th>
<th>ISO20022 ID</th>
<th>ISO20022 Repository</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>Corporate Customer</td>
<td>Current Account Fulfilment Arrangement Related Reference</td>
<td>The central record maintained for a current account product instance</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>7</td>
<td>Properties</td>
<td>Properties and reference details of the instance</td>
<td>--</td>
<td>--</td>
<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
</tr>
<tr>
<td>8</td>
<td>Current Account Fulfilment Arrangement Related Property</td>
<td>Definition of the Current Account Fulfilment Arrangement in service operation</td>
<td>--</td>
<td>--</td>
<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
</tr>
<tr>
<td>9</td>
<td>Current Account Number</td>
<td>The account number in the available format (i.e. BIAN</td>
<td>--</td>
<td>--</td>
<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
</tr>
<tr>
<td>10</td>
<td>Customer Reference</td>
<td>Reference to the account primary passport</td>
<td>--</td>
<td>--</td>
<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
</tr>
<tr>
<td>11</td>
<td>Bank Branch, Location Reference</td>
<td>Bank branch associated with the account for testing purposes</td>
<td>--</td>
<td>--</td>
<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
</tr>
<tr>
<td>12</td>
<td>Account Type</td>
<td>The type of current account (e.g. checking, student, small business)</td>
<td>--</td>
<td>--</td>
<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
</tr>
<tr>
<td>13</td>
<td>Account Currency</td>
<td>The primary account currency</td>
<td>--</td>
<td>--</td>
<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
</tr>
<tr>
<td>14</td>
<td>Account Identification</td>
<td>Reference identifying the account in appropriate handling</td>
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<td><a href="https://www.iso20022.org">Link to ISO20022</a></td>
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</tbody>
</table>
Extract from Current Accounts

BIAN Reference Architecture
Abstract Metamodel – Layered view
Service Domains and Business Object Model

BIAN Reference Architecture
Abstract Metamodel – Layered view

Diagram

Diagram

Model

Diagram

Model
BIAN’s Internal Wiki and Official Homepage
Complimentary BIAN Webinar: 
BIAN & ACTUS PoC - The Power of Algorithmic Financial Contracts

The ACTUS Financial Research Foundation has published an open source algorithmic standard for financial contracts. The ACTUS contracts are the key generic building blocks of finance because they define the cashflow-patterns of all major banking instruments, which are the starting point for all analytics about the contracts. This perspective makes it possible to go beyond conventional point-in-time valuations by projecting future cashflows in a flexible and highly consistent way to enable a whole range of important analyses.

For the PoC we have applied the ACTUS standard to extend the higher level BIAN semantic product specifications. The PoC shows – as an example – how a bank can produce for a customer a consolidated view of his or her position across the many diverse products they hold - projecting out their future financial health considering many different market and even employment scenarios. For example, they can use these powerful analytical insights to determine the best type of mortgage for which they should apply.

In the webinar we will cover the lessons learned mapping ACTUS to BIAN, demonstrate the PoC and discuss some of the powerful insights and perspectives the ACTUS algorithmic data can support looking beyond the examples of the PoC. The analytical engine for the PoC is provided.

June 15
4pm - 5pm (CEST)
10am - 11am (EDT)

Can’t make it on June 15? Sign-up anyway we send you the recording.

June
• General Intro and Design Principles – Tuesday, June 2, 2020 – 15 CET / 9am EDT
• Enterprise Architecture approach of BIAN – Tuesday, June 9, 2020 – 15 CET / 9am EDT
• Applying the Standard and APIs – Wednesday, June 10, 2020 – 15 CET / 9am EDT
• Q&A Session – Thursday, June 11, 2020 - 15 CET / 9am EDT

July
• General Intro and Design Principles – Thursday, July 2, 2020 – 15 CET / 9am EDT
• Enterprise Architecture approach of BIAN – Monday, July 6, 2020 – 15 CET / 9am EDT
• Applying the Standard and APIs – Wednesday, July 8, 2020 – 15:30 CET / 9:30am EDT
• Q&A Session – Thursday, July 16, 2020 - 15 CET / 9am EDT
Fees (annual membership)

- Software / Tech vendors / Integrators (250 employees or more)
  - EUR 30.000,-
- Banks / FI’s that are not vendors
  - EUR 20.000,-
- Software / Tech vendors / Integrators (less than 250 employees)
  - EUR 10.000,-
- Federal Banks / Central Banks
  - EUR 10.000,-
- Software / Tech vendors / Integrators (less than 50 employees)
  - EUR 5.000,-
- Academic Partners
  - EUR 0,-
Questions?
Hans Tesselaar

Since 2011 I’m the Executive Director of the Banking Industry Architecture Network responsible for the day to day operations, PR, New Member Acquisition and long- and mid-term strategy.

I’m also owner / director of The Netherlands based consultancy company Advance Banking Design.

Professional Skills.

Over 30 years experience in Financial Services Industry being active for Banks, Insurance companies and Pension funds.

For 15 years at different management positions within ING Insurance, from Chief Architect to Director Sourcing, Innovation and Governance (Director CIO Office) and Program Director.

Special areas of knowledge: Enterprise Architecture, Banking Transformation, IT Strategy, API and Microservices development and implementations.


Contact information:

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www.portal.bian.org
Patrick is a BIAN 8.0, Cobit 5, TOGAF 9.2, ArchiMate 3.1 and SFIA 6 certified enterprise architect. He has more than 20 years experience in the different domains of enterprise architecture in financial institutions, Retail, Government, Utilities, etc. He has a master in Commercial Engineering and at the university of Leuven KULeuven and he also graduated in Insurance sciences. In 2009 he was awarded and nominated as a fellow of the university of Leuven. He is founding member and director of the Data Management Association (www.dama-belux.org), Managing Partner of Envizion (www.envizion.eu). In 2018 he started developing the BIAN Information Architecture and became a Lead Architect of BIAN (www.bian.org).
Please stay muted and type your Questions in the righthand bar, or send them to info@bian.org