OAGIS 9.0 Introduction
August 9, 2005

Michael Rowell
Chief Architect
Open Applications Group, Inc.

http://www.openapplications.org

Agenda

- Includes
- Tools Used
- Content Updates
  - Completed Content Projects
- Technical Updates
  - Updates
- Getting OAGIS 9.0
- What you get
- What is Core Components
- Core Component Implementation Details

OAGIS 9.0 Includes

- **Core Components**
  - ISO 15000-5 – CCTS 2.01
  - UN/CEFACT TBG17 – ACC and BIE/ABIE as defined to this point.
  - Includes updates to support UN/CEFACT ATG2 Naming and Design Rules.
    - Where we deviate it is to meet the functional needs of OAGIS and OAGi member requirements.
- **Completed Project**
  - Joint Project with STEP
  - Financial Payment Harmonization with OAGI, IFX, SWIFT and TWIST.
    - This is now an ISO standard ISO 20022 (www.iso20022.org)
  - Additional Nouns developed by OAGi
    - CRM
      - SalesLead
      - Opportunity
    - Logistics
      - ShipUnit
      - CarrierRoute
    - Online Orders
    - LocationServices
    - Sarbanes Oxley
      - RiskControlLibrary
- **Simplification of Verbs**

Tools used

- IDEs
  - Altovia's XML Spy 2004 and 2005
  - GEFEG's EDIFIX
  - Progress Software's Stylus Studio
  - Tibco's Turbo XML
- Parsers
  - Apache's Xerces
  - Microsoft MSXML

Content Update

- Content Completed by the following Project Work Groups
  - Invoice Requirements
  - Shopping Cart
  - Logistics
  - Customer Resource Management
  - Financial Services
  - Engineering
  - Location Service
  - Sarbanes-Oxley

Review of Invoice

- Reviewed the OAGIS Invoice to ensure compliance with the new EU Invoice Requirements.

- Define the information needed for a ShoppingCart.
  - OnlineOrder – Provides the Line Items that an online shopper has selected. The Online Order may then be stored or posted at which point it becomes affectively an Order and goes through the same process as a PurchaseOrder.
  - OnlineSession – Provides session information to enable the communication with an Online Service.

Logistics Work Group

- ShipmentUnit – Identifies the traceable containers of a shipment this is traditionally a Carrier view of the shipping containers. The ShipmentUnit is also used on the Shipment.

- CarrierRoute – Describes the Route in which a Carrier is to take to make deliveries…

- SalesLead – Identifies a list of SalesLeads these may be unqualified leads…or contacts that may be interested in products/services.

- Opportunity – Are qualified leads that are interested in a purchase.

Financial Services

- Originally an OAGi project that was expanded in order to Harmonize communication between Corporations and Banks to include the IST Members (OAGi, IFX, SWIFT, TWIST)
  - ISO20022 (more information at www.iso20022.org
    - CreditTransferIST   - CreditTransfer
    - DebitTransferIST   - DebitTransfer
    - PaymentStatusIST   - PaymentStatus

Engineering Work Group

- A joint project with STEP to express and EngineeringWorkDocument as defined by STEP in OAGIS
  - EngineeringWorkDocument – Communicates the Engineering design characteristics for a given Item between CAD/CAM and ERP.

LocationService Work Group

- LocationService – Provides a mechanism to communicate with services provided today that confirm an address and/or provide a common form for the Address…

ICXML Work Group

- ## ICXML or Sarbanes-Oxley
  - RiskControlLibrary - Provides a way to communicate and track an organization conformance and risks as they relate to the Sarbanes-Oxley Law in the US.

The Numbers

- ## OAGIS 9.0 includes
  - 77 Nouns
  - 19 Verbs
    - 7 deprecated
    - 19 Verbs with 7 being deprecated
  - 434 BODs

Technical Updates

- XML Schema Prefix
- OAGIS Namespace
- Global Elements
- Naming Updates
- Standalone and Developer BODs
- Simplifying the Schema
- Verbs
- Core Components
- Core Components Implementation

- In the schema files change the XML Schema Namespace Prefix from "xs" to "xsd"

OAGIS - Namespace

- Change namespace
  - From: http://www.openapplications.org/oagis
  - To: http://www.openapplications.org/oagis/9

Global Elements

- Using primarily global elements throughout OAGIS
  - Use global elements for BODs, Nouns, Verbs, Components, Compounds, and Fields.
  - For example
    - PurchaseOrder\Header in OAGIS 8.0 becomes
    - PurchaseOrder\PurchaseOrderHeader,
  - Local elements are used in places that OAGIS is not intended to be extended directly via substitutionGroups (while these most certainly may be extended indirectly in an Overlay.)
    - i.e. DataArea, CCTS aggregates that provide semantic attributes

Naming Updates in OAGIS 9.0

- OAGIS 9 incorporates today's best practices for XML and continues to takes full advantage of XML Schema
  - Use primarily global elements.
  - Incorporates ATG 2 Naming and Design Rules
    - ISO 11179
    - Long tag names
    - Use of UpperCamelCase for Elements and Types
    - Use of lowerCamelCase for attributes
    - Make use of XML Schemas Typing to define types for everything...inherit common pieces of the component and Noun definitions
      - Minimize the number of definitions and the amount of code needed to process the standard.
    - All Types are end with the word "Type"

OAGIS 9.0 – Developer and Standalone BODs

- Developer BODs make use of the multiple files to maintain elements and types as they are shared in order to provide a normalized view of common components.
- Standalone BODs all of the elements and types a BOD uses from the OAGIS namespace are all contained within a single file.
  - Where additional namespaces are used additional files must be used.

Simplifying the Schema

- No SubstitutionGroups in OAGIS 9.0
- SubstitutionGroups are used to enable Overlays
- Improved access to key data like IDs
- Provide more direction on what is need within given context (i.e. the semantics of the given Noun.)
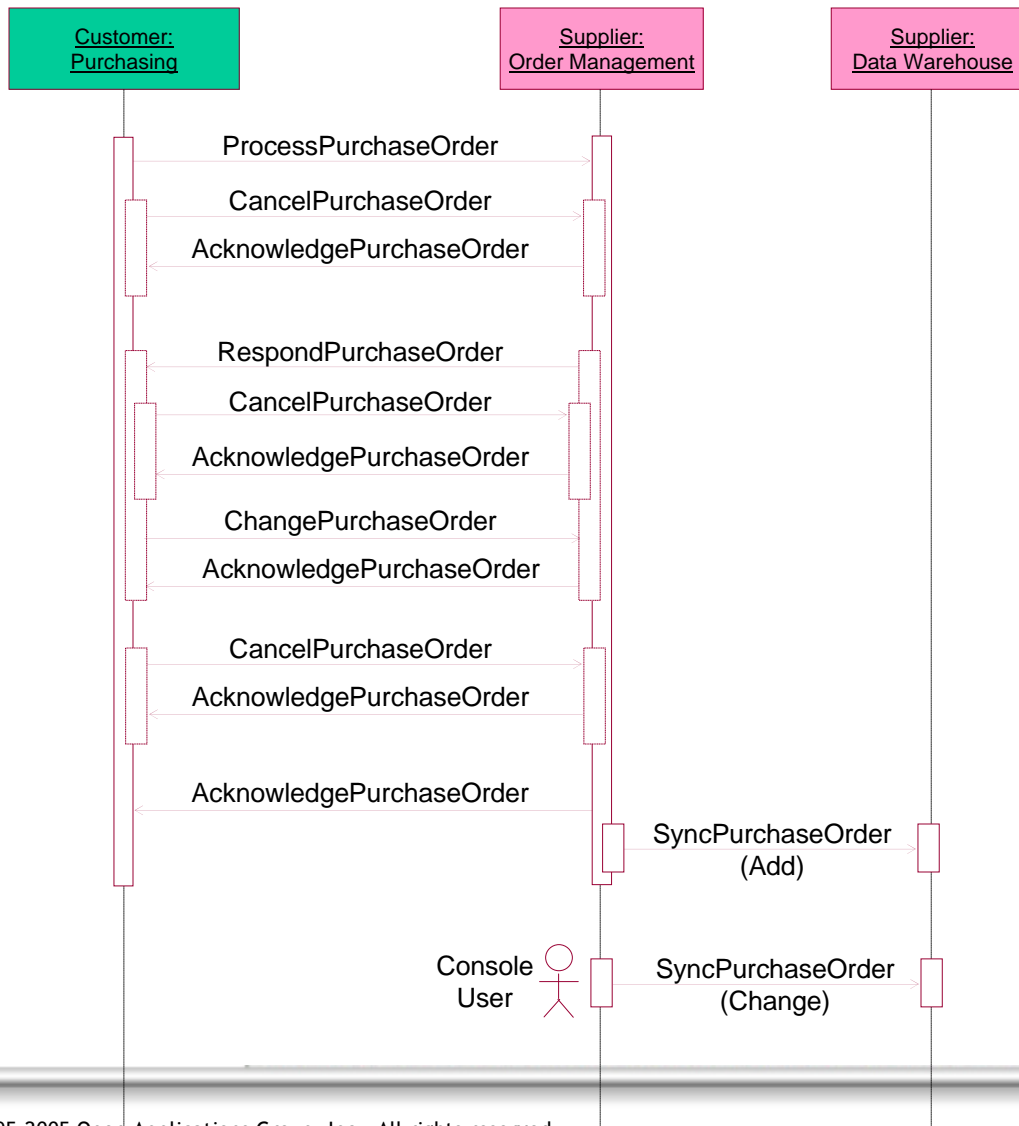
Introduction to Verbs

Scope for 9.0 Update - Verbs

- Verb update
  - Moving from 19 verbs to 12 verbs to help clarify the use of the Verbs.
    - These Verbs are being deprecated no deletions.
      » This means that these verbs will continue to be in place for three releases forward, after which they will be discontinued.

OAGi — Open Applications Group

Customer: Purchasing — Supplier: Order Management — Supplier: Data Warehouse

ProcessPurchaseOrder
CancelPurchaseOrder
AcknowledgePurchaseOrder

RespondPurchaseOrder
CancelPurchaseOrder
AcknowledgePurchaseOrder

ChangePurchaseOrder
AcknowledgePurchaseOrder

CancelPurchaseOrder
AcknowledgePurchaseOrder

AcknowledgePurchaseOrder

SyncPurchaseOrder (Add)

Console User — SyncPurchaseOrder (Change)

Notes:
1. ConfirmBOD can occur as an intermediate response to each and every message.
2. The same scenario could be initiated with a Change or Cancel PurchaseOrder for and existing order that has already been acknowledged.

Discussion:
1. The AcknowledgePurchaseOrder in response to any of the CancelPurchaseOrder messages and the originating ProcessPurchaseOrder terminates the transaction. Currently I don't use graphics to depict this.

OAGIS Verbs Deprecated in 9.0

From Training deck and Meeting Updates Since 0211

- Acknowledge
- Add   (deprecated)
- Allocate   (deprecated)
- Cancel
- Change
- Confirm
- Create   (deprecated)
- Get
- GetList   (deprecated)
- Issue   (deprecated)

- List   (deprecated)
- Load
- Post
- Process
- Receive   (deprecated)
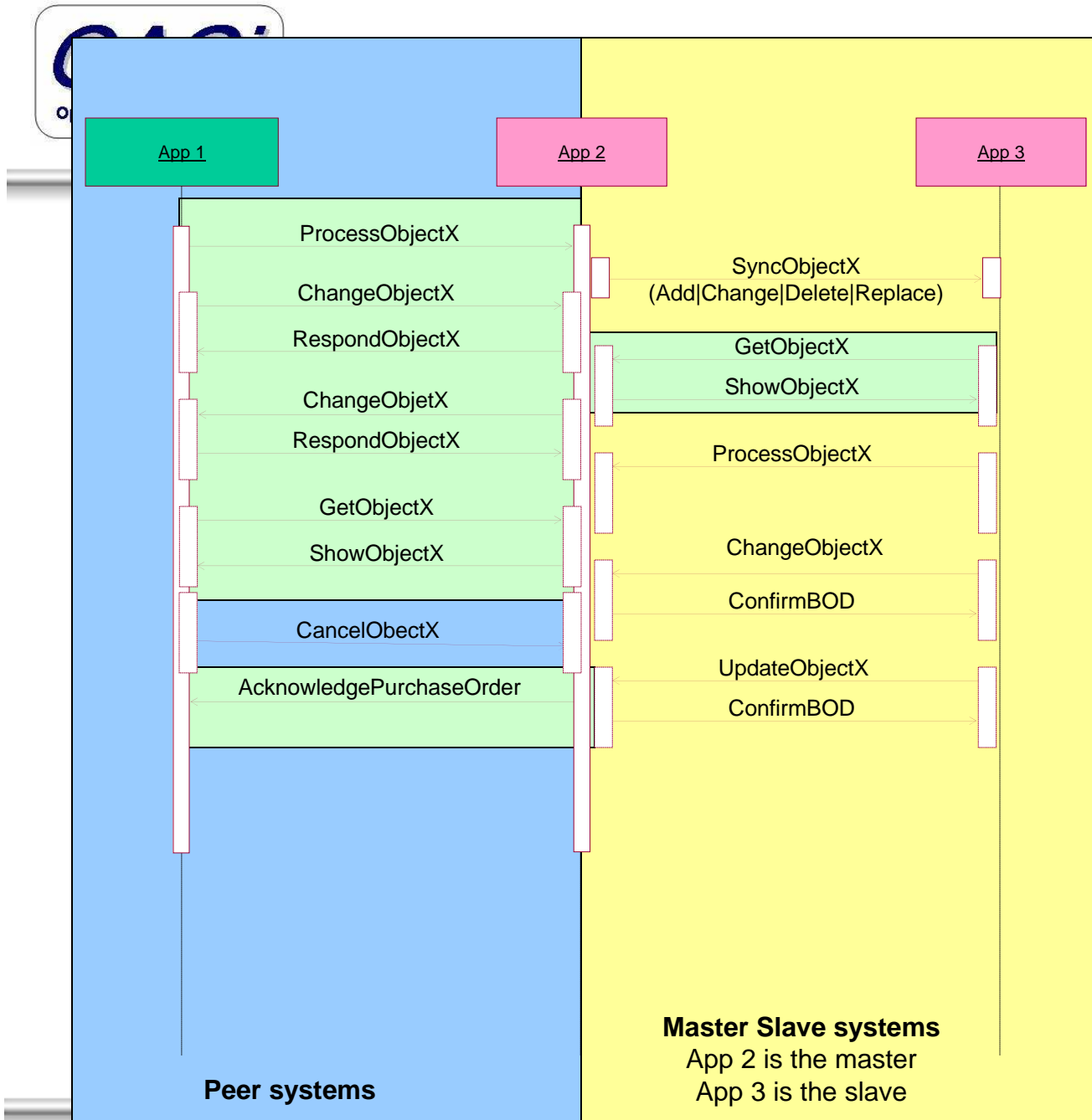- Respond
- Show
- Sync
- Update

Vers 8.0 to 9.0

OAGIS 8.0 Verbs	OAGIS 9.0 Verbs
Acknowledge	Acknowledge
Add	Process
Allocate	Process
Cancel	Cancel
Change	Change
Confirm	Confirm
Create	Process
Get	Get
GetList	Get
Issue	Process
List	Show
Load	Load – Synonym for Sync in Financial
Post	Post – Synonym for Process in Financial
Process	Process
Receive	Process
Respond	Respond
Show	Show
Sync	Sync
Update	Update

Assumptions

- There is no difference between processing done within a company and the processing done by a company's supply chain.
  - Everything can be outsourced…
  - This is further supported from the early days of OAGi with the different groups focusing on internal versus external messages and the discovery that these were the same.
- Environments supported are Request-Reply (pull), Publish-Subscribe (push).

Verbs
- Process – Acknowledge
- Change – Respond
- Get – Show
- Update
- Cancel
- ConfirmBOD – Can occur in response to each BOD.
- Sync

BODs not shown that are in 9.0
- Load – synonym for Sync for Financial Docs
- Post – synonym for Process for Financial Docs

Request-Reply Verbs are in green. All of these verbs have an optional reply as noted above the Verbs List.

Publish Verbs are out side of the green box. This includes the orange Process. Any Verb can be used in a Publish transport.

OAGIS Verb Pairings

Request	Reply
Post - Synonym for Process in Financial	Acknowledge
Process	Acknowledge
Get	Show
Change	Respond
Update	Respond
Sync	ConfirmBOD
Load – Synonym for Sync in Financial	ConfirmBOD
Cancel	ConfirmBOD
*	ConfirmBOD
Add	
Allocate	
Create	
GetList	List
Issue	
Receive	

Message verb - Request Message	Message verb - Response	Example	Usage notes
Sync (with options selected for either Add, Change, Delete or Replace)	Confirm	Request: SyncCustomerAddress (Add) Response: ConfirmCustomerAddress	Used to replicate data between applications
Process	Acknowledge	Request: ProcessPurchaseOrder Response: AcknowledgePurchaseOrder	Used to initiate a business operation, which usually results in the creation of a new instance of a business object.
Cancel	Confirm	Request: CancelReservation Response: ConfirmReservation	Used to stop a business operation
Get	Show	Request: GetOrderStatus Response: ShowOrderStatus	Used to retrieve information from an application
Change	Confirm	Request: ChangePurchaseOrder Response: ConfirmPurchaseOrder	Used to change a business operation

Nouns

Noun Naming Convention

- Object + Object Attribute
- Action + Object
- Qualifier(s) + Object

Nouns

ActualLedger	CustomerPartyMaster
AllocateResource	DebitTransfer
BOD	DebitTransferIST
BOM	DispatchList
BudgetLedger	EmployeeWorkSchedule
CarrierRoute	EmployeeWorkTime
Catalog	EngineeringChangeOrder
ChartOfAccounts	EngineeringWorkDocument
ConfirmWIP	Field
CostingActivity	InspectDelivery
Credit	InventoryBalance
CreditStatus	InventoryConsumption
CreditTransfer	InventoryCount
CreditTransferIST	Invoice
CurrencyExchangeRate	InvoiceLedgerEntry

Nouns

IssueInventory	Payable
ItemMaster	PaymentStatus
JournalEntry	PaymentStatusIST
Location	Personnel
LocationService	PickList
MaintenanceOrder	PlanningSchedule
MatchDocument	PriceList
MergeWIP	ProductAvailability
MoveInventory	ProductionOrder
MoveWIP	ProjectAccounting
OnlineOrder	ProjectMaster
OnlineSession	PurchaseOrder
Operation	Quote
Opportunity	Receivable
PartyMaster	ReceiveDelivery

34

Nouns

ReceiveItem	UOMGroup
RecoverWIP	WIPStatus
RequireProduct	
Requisition	
RFQ	
RiskControlLibrary	
Routing	
SalesLead	
SalesOrder	
SequenceSchedule	
Shipment	
ShipmentSchedule	
ShipmentUnit	
SplitWIP	
SupplierPartyMaster	

Core Components

The OAGIS BOD Stack
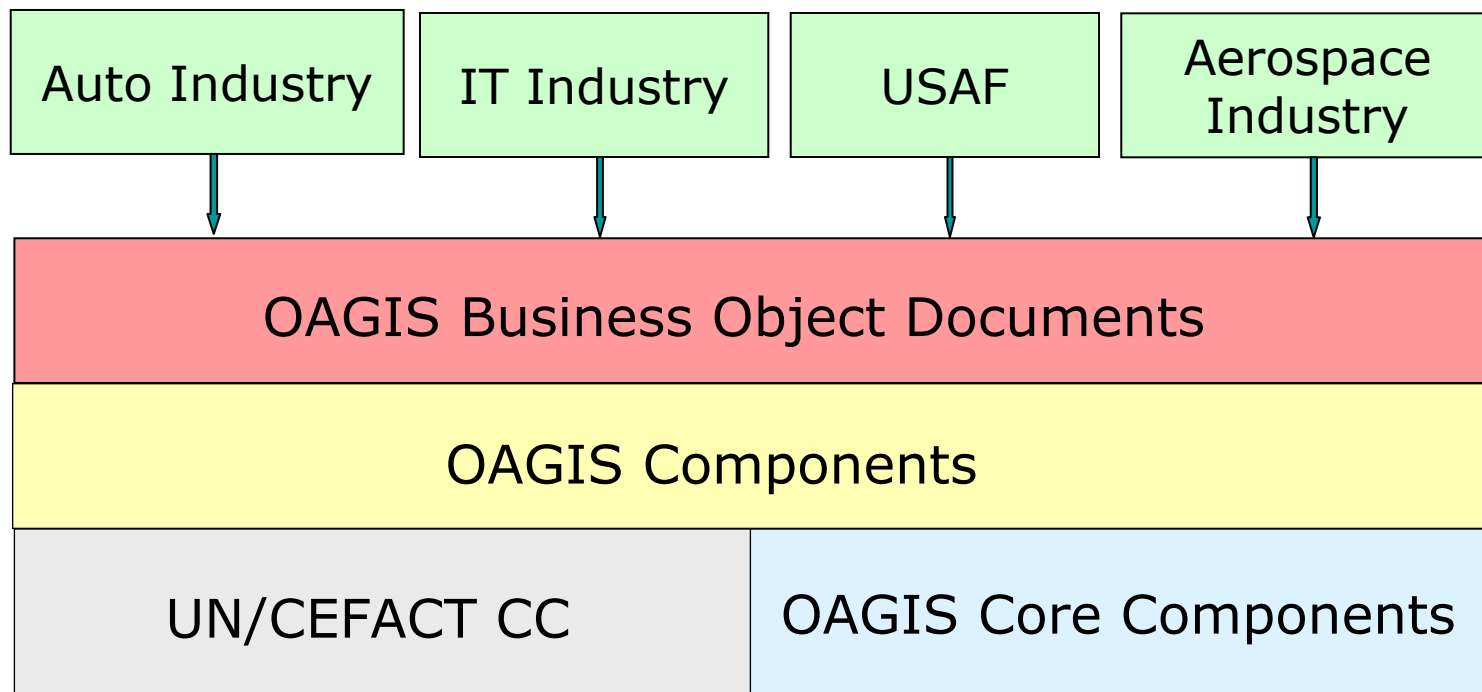
Auto Industry	IT Industry	USAF	Aerospace Industry

↓ ↓ ↓ ↓

OAGIS Business Object Documents

OAGIS Components

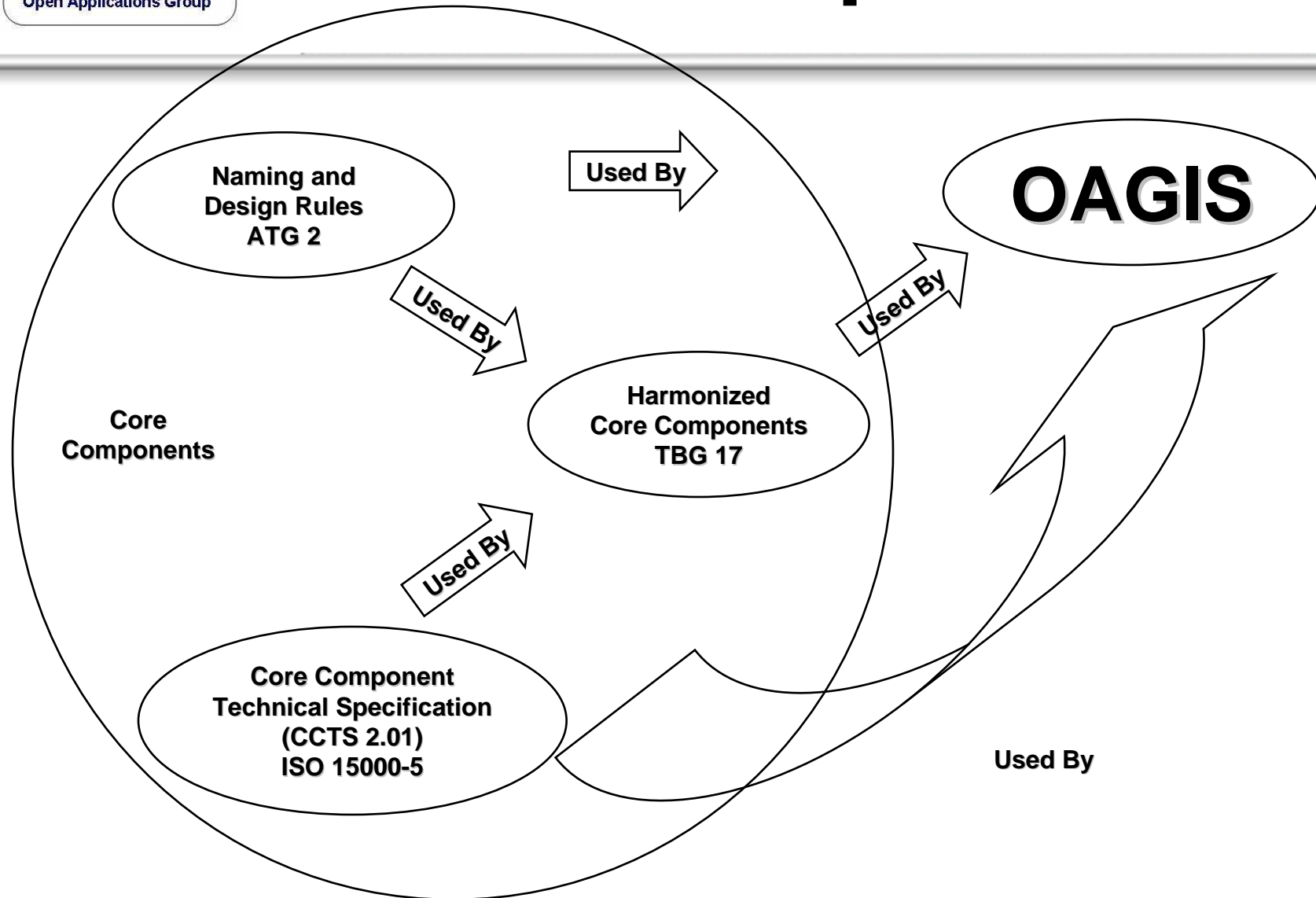| UN/CEFACT CC	OAGIS Core Components

Core Components

- ISO 15000-5 – CCTS 2.01
- UN/CEFACT TBG17 – ACC and BIE/ABIE as defined to this point.
- Includes updates to support UN/CEFACT ATG2 Naming and Design Rules.
  - Where we deviate it is to meet the functional needs of OAGIS and OAGi member requirements.

Core Components?

OAGi Open Applications Group

OAGIS

Naming and Design Rules ATG 2

Used By

Core Components

Used By

Harmonized Core Components TBG 17

Used By

Core Component Technical Specification (CCTS 2.01) ISO 15000-5

Used By

Used By

OAGi
Open Applications Group

- Core Components
  - Core Component Types 2.01 (CCTS) - ISO 15000-5
  - Unqualified Data Types
    - Currency,
    - MIME Encoding,
    - UnitCode,
  - Qualified Data Type
    - Language
  - Aggregate Core Component (ACC),
  - Aggregate Business Information Entity (ABIE)

How Core Components are to be Implemented (ATG2)

- Each of the Core Component Specifications are implemented in their own namespace therefore in their own file.

- Must use Code list for:
  - Currency,
  - Language,
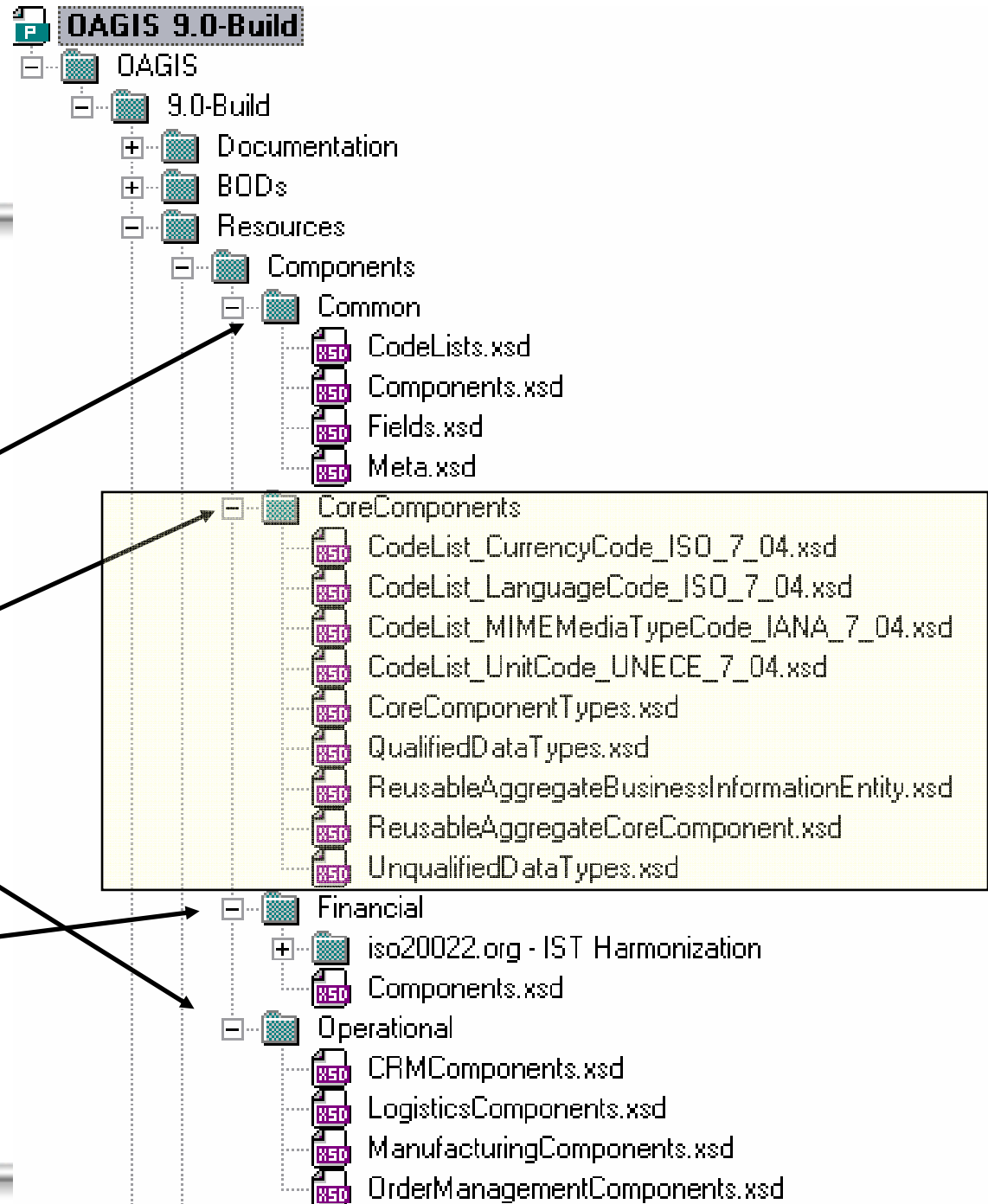 - UnitCode,
  - MIME Encoding

(ATG2) Core Component Implementation

Core Component Types (CCTS) 2.01 / ISO 15000-5	CoreComponetTypes.xsd
Unqualified Data Types	UnqualifiedDataTypes.xsd
Currency	CodeList_Currency_ISO_7_04.xsd
MIME Encoding	CodeList_MIMEMediaTypeCode_IANA_7_04.xsd
Qualified Data Type	QualifiedDataTypes.xsd
Language	CodeList_LanguageCode_ISO_7_04.xsd
Aggregate Core Components	
Aggregate Business Information Entity	ReusableAggregateBusinessInformationEntity.xsd

OAGIS Component Libraries

OAGIS 9.0-Build

- OAGIS
  - 9.0-Build
    - Documentation
    - BODs
    - Resources
      - Components
        - Common
          - CodeLists.xsd
          - Components.xsd
          - Fields.xsd
          - Meta.xsd
        - CoreComponents
          - CodeList_CurrencyCode_ISO_7_04.xsd
          - CodeList_LanguageCode_ISO_7_04.xsd
          - CodeList_MIMEMediaTypeCode_IANA_7_04.xsd
          - CodeList_UnitCode_UNECE_7_04.xsd
          - CoreComponentTypes.xsd
          - QualifiedDataTypes.xsd
          - ReusableAggregateBusinessInformationEntity.xsd
          - ReusableAggregateCoreComponent.xsd
          - UnqualifiedDataTypes.xsd
        - Financial
          - iso20022.org - IST Harmonization
          - Components.xsd
        - Operational
          - CRMComponents.xsd
          - LogisticsComponents.xsd
          - ManufacturingComponents.xsd
          - OrderManagementComponents.xsd

- OAGIS

- UN/CEFACT

- IST/ISO

43

A Look Inside Core Components

Abbreviations

Name	Abbreviation
CoreComponentTypes	CCT
Unqualified Data Types	UDT
Qualified Data Types	QDT
Aggregate Core Components	ACC
Aggregate Business Information Entity	ABIE
Reusable Aggregate Core Components	RACC
Reusable Aggregate Business Information Entity	R(U)ABIE

Core Component Type Implementation

- CoreComponentTypes are implemented by being further defined by:
  - UnqualifiedDataTypes
  - QualifiedDataTypes

- UN/CEFACT requires that the CodeList indicated earlier be used.
  - Each of these restricts the set of possible normalizedStrings to be the set of values defined for the given codelist.
  - What happens if an implementation or application does not use that codelist?
    - They can not use the standard…or a translation between the codelists must take place.

- ## ACCs
  - Are further restricted by the ABIEs and not intended to be used directly
  - ACC's must be provided in a file Reusable Aggregate Core Component.

- ## ABIEs
  - Provide how the given implementation uses the ACC.
  - Must be provided in a file named Reusable Aggregate Business Information Entity.
  - May be restrictions of the associated ACC
  - May provide qualifying names for the associated attributes
  - But must not extended the defined ACC.

A Look Inside OAGIS 9.0 Implementation of Core Components

Trying to Keep it Simple

OAGIS CodeList Implementation

- While OAGi has always recognized the need for Codelists,
  - There must be a way to communicate the Codelist of the vertical industry standard, company, integration and/or the application.
  - While OAGIS uses and recommends the defined Codelists from UN/CEFACT, we also allow additional values to be present.
    - This is accomplished by the OAGIS CodeList file which is in a different namespace from the rest of OAGIS.

50

OAGIS CodeList Implementation

- The types defined in the UDT and QDT use the OAGIS CodeList Implementation.

- As do the types in OAGIS.

- This allows OAGIS or OAGIS Overlays to make use of other codelists.

  - This is critical for any standard to be implemented.

- As we have seen there are natural inclusions of the different CoreComponents parts into the implementation details as defined by Core Components.
  - For Example the UN/CEFACT implementation defines:
    - CoreComponentTypes are implemented by being further defined/restricted by UnqualifiedDataType, QualifiedDataTypes
    - ACCs are defined/restricted by the ABIEs that use them.
  - OAGIS Implementation of Core Components follows this inclusion model, while providing the details of the included files.
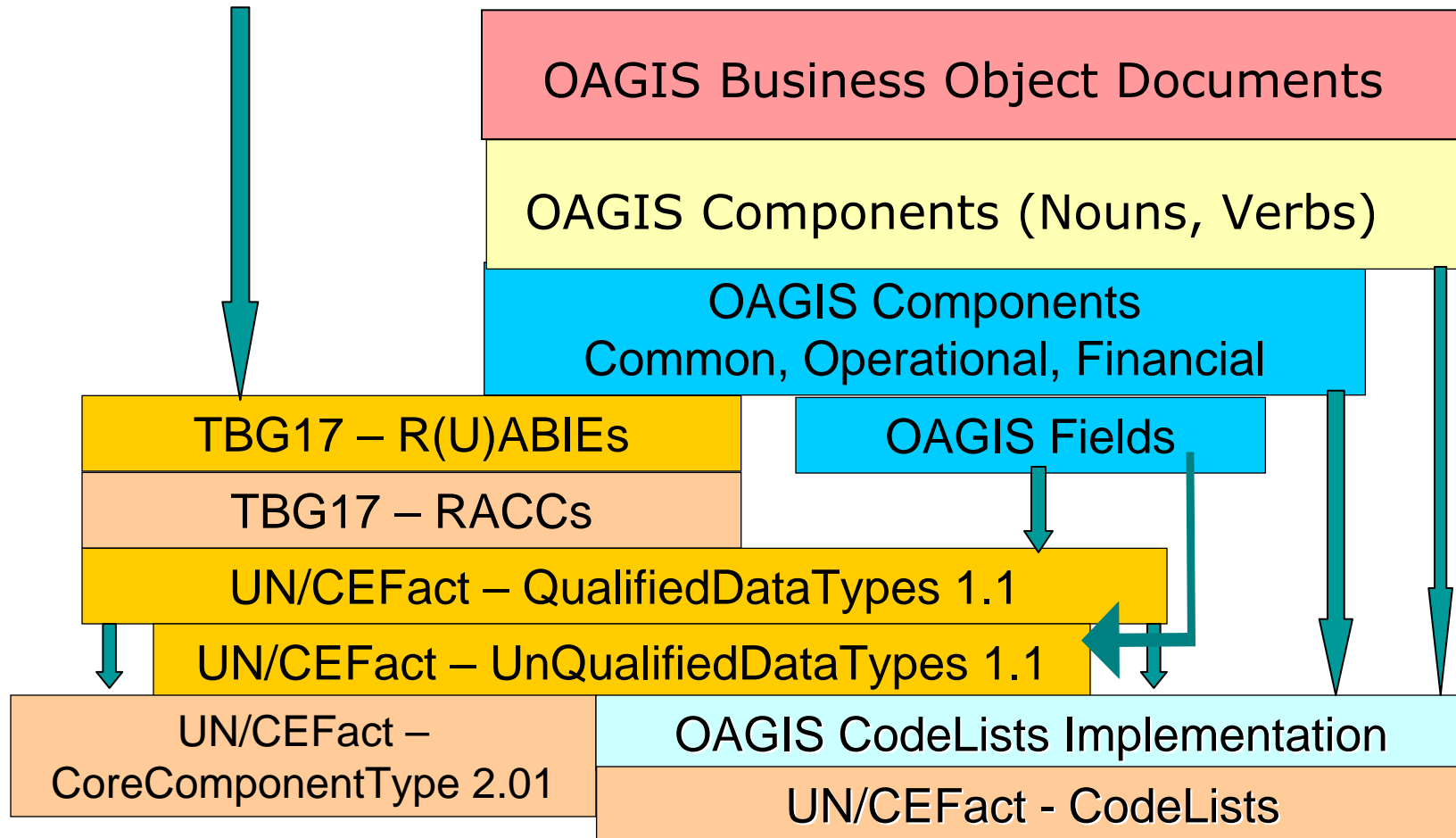
- ## ACCs - Are further restricted/defined by the ABIEs and not intended to be used directly
  - Since derivation by restriction is not possible across namespaces in XML Schema there is no value in importing the RACC file into the RUABIE.

OAGIS Inclusions

- The OAGIS Fields file defines the field types and elements.
  - Imports the QDT, UDT and CodeList
  - Provides a wrapper type in the OAGIS namespace for these types.
- The OAGIS Components file defines the Common Components types and elements.
  - Provides an equivalent type within OAGIS for the RUABIE types.
    - These types can be identified by the type name XXXABIEType.
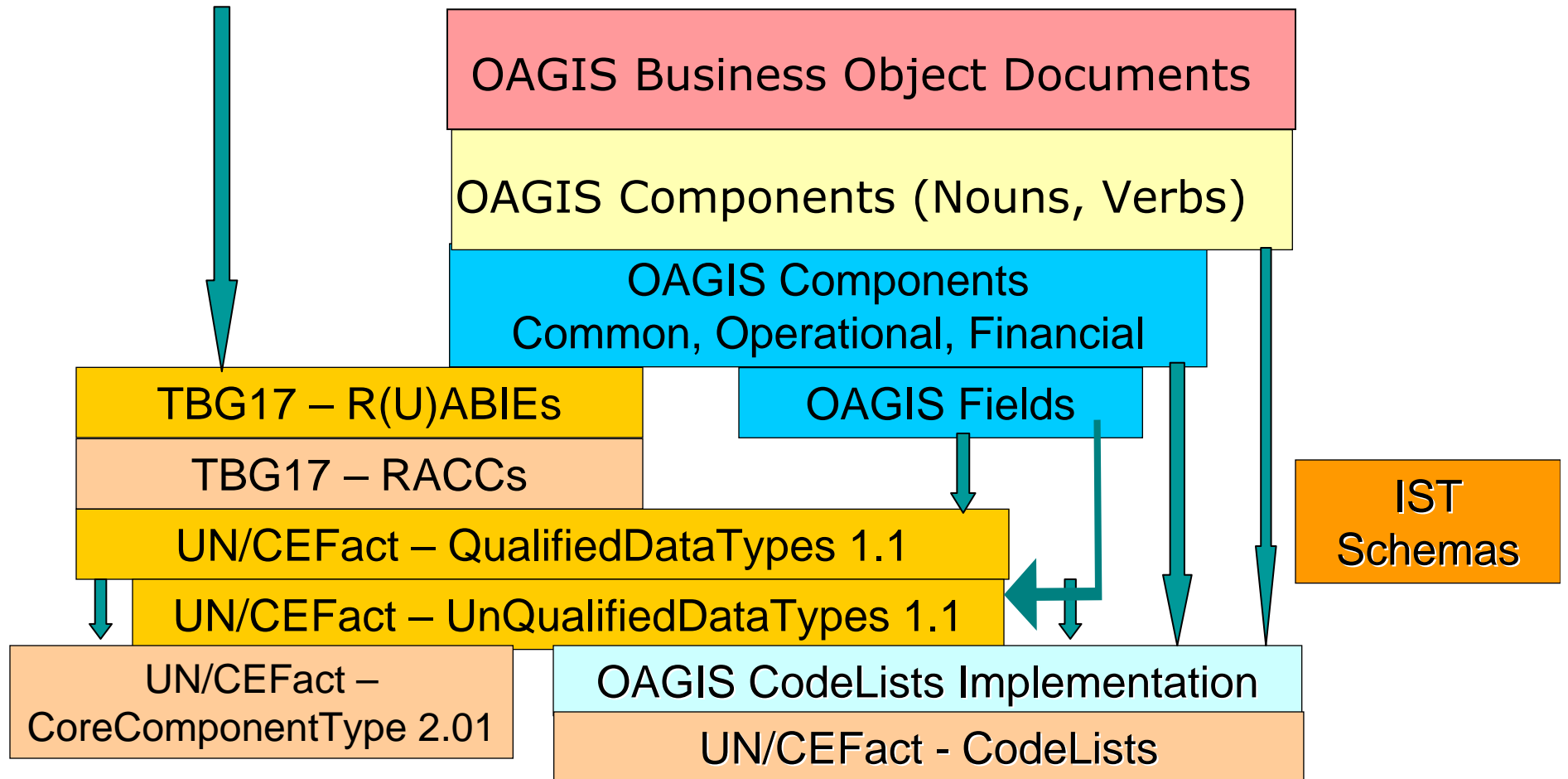
Core Component Implementation

OAGIS Business Object Documents

OAGIS Components (Nouns, Verbs)

OAGIS Components
Common, Operational, Financial

TBG17 – R(U)ABIEs

OAGIS Fields

TBG17 – RACCs

UN/CEFact – QualifiedDataTypes 1.1

UN/CEFact – UnQualifiedDataTypes 1.1

UN/CEFact – CoreComponentType 2.01

OAGIS CodeLists Implementation

UN/CEFact - CodeLists

Namespaces Visible in OAGIS 9.0

1. OAGIS
2. OAGIS CodeList
3. QDT
4. UDT
5. Currency,
6. Language,
7. UnitCode,
8. MIME Encoding

Additional Namespaces

- IST Namespaces
    1. IST – CreditTransfer,
    2. IST - PaymentStatus

Core Component Implementation with IST

OAGI Open Applications Group

OAGIS Business Object Documents

OAGIS Components (Nouns, Verbs)

OAGIS Components Common, Operational, Financial

TBG17 – R(U)ABIEs

OAGIS Fields

TBG17 – RACCs

UN/CEFact – QualifiedDataTypes 1.1

IST Schemas

UN/CEFact – UnQualifiedDataTypes 1.1

UN/CEFact – CoreComponentType 2.01

OAGIS CodeLists Implementation

UN/CEFact - CodeLists

QUESTIONS & ANSWERS

Getting OAGIS 9.0

How to Begin:
Get OAGIS

- Get OAGIS (if you do not already have it) from the www.openapplications.org site.
  1. Click "Free Downloads"
  2. Click on OAGIS 9.0 Schema Download link
  3. Fill in the Registration Form; click the Goto download button at the bottom of the form.
  4. Simply click on either the zip link or the self-extracting exe link for OAGIS 9.0. (This will retrieve a single file that contains all of OAGIS Schemas 12MB.)
  5. Once downloaded unzip the file maintaining the directory structure contained in the zip file. (This is important because the OAGIS files are relatively linked.)

How to Begin:
Get OAGIS (continued)

6. Click "Free Downloads" link in the navigation panel

7. Click on OAGIS 9.0 documentation Download link

8. Fill in the Registration Form; click the Goto download button at the bottom of the form.

9. Simply click on the link for OAGIS 9.0 Documentation. (This will retrieve a single file that contains all of the OAGIS Documentation (221MB).)

10. Once downloaded unzip the file maintaining the directory structure contained in the zip file. (This is important because the OAGIS files are relatively linked.)
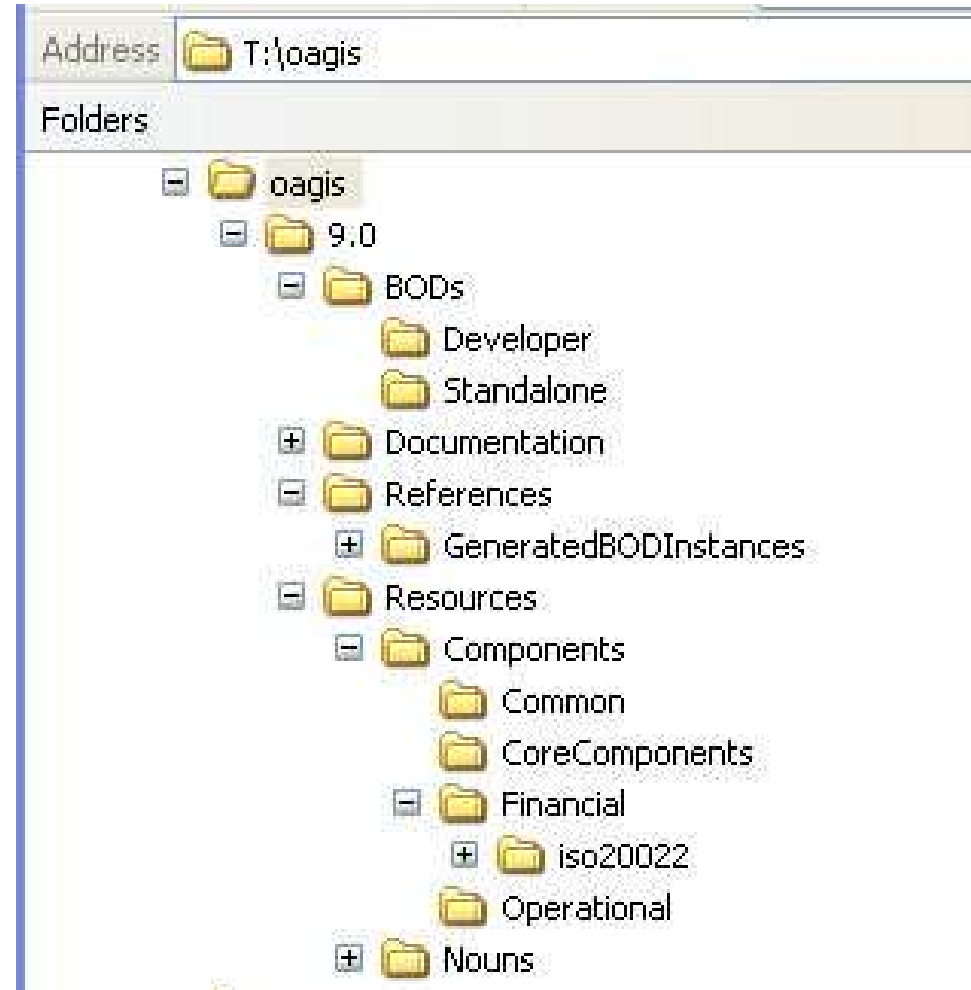
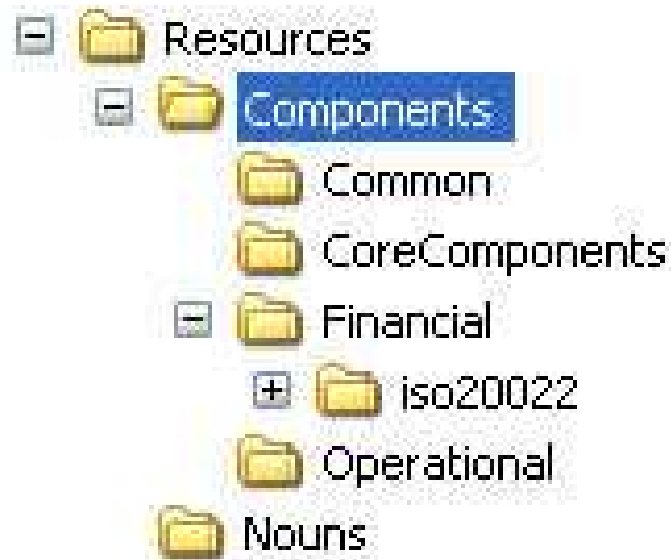# What you get!

What you get:
Look Around OAGIS
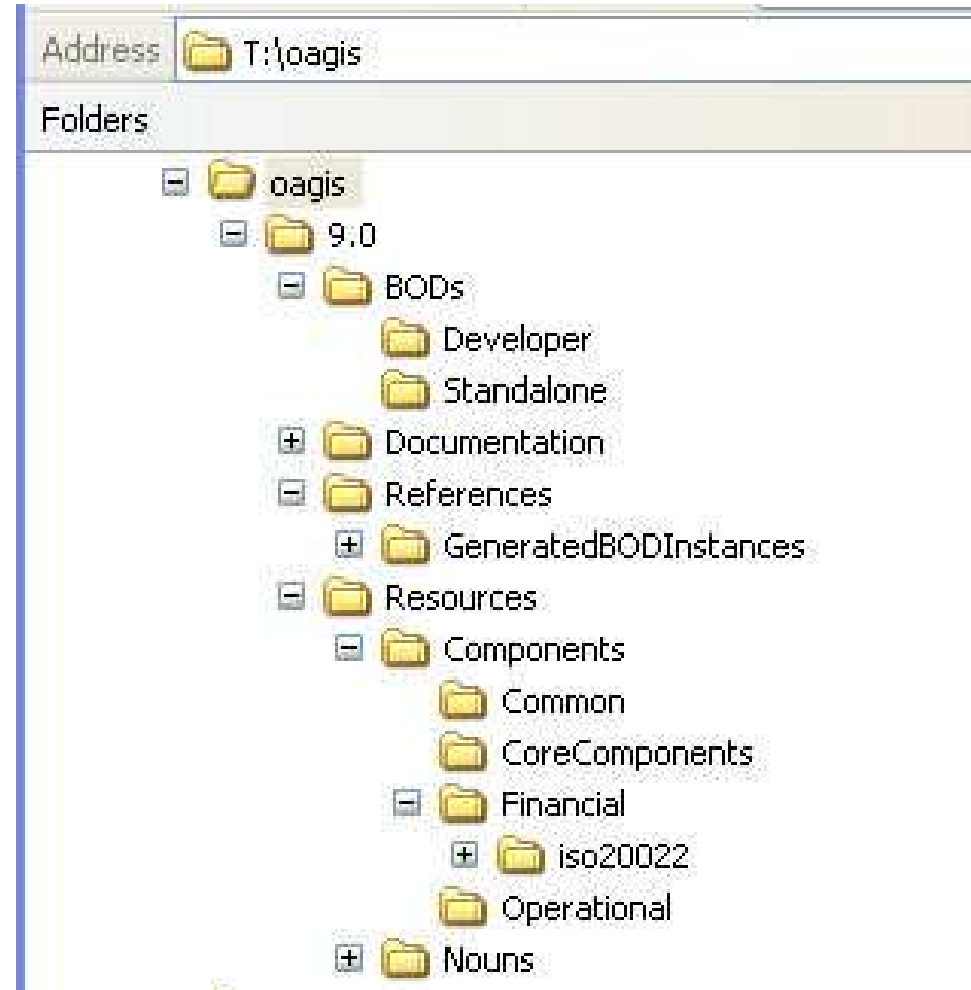
What you get:
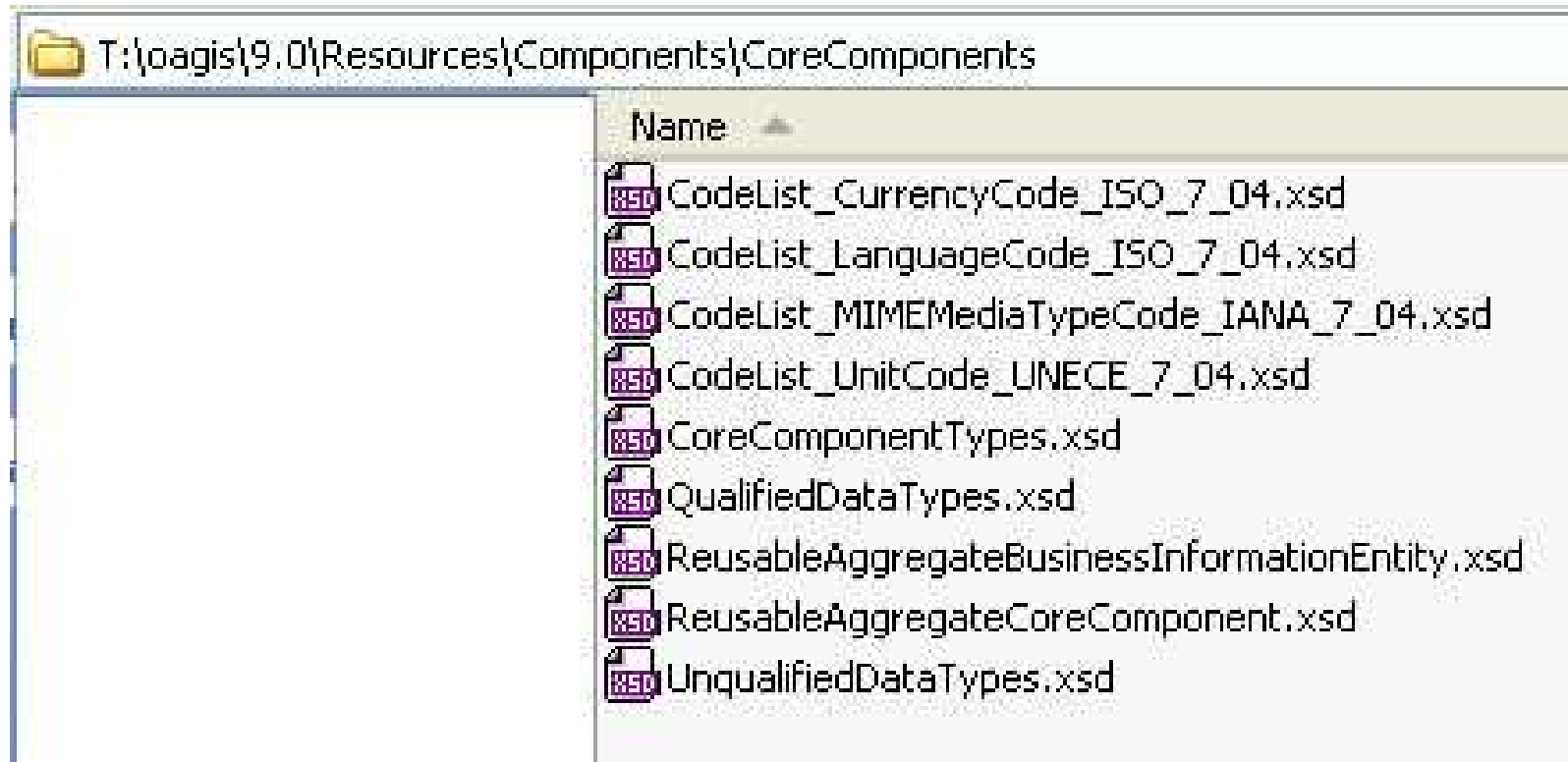# Look Around OAGIS

OAGIS Class Resource Libraries

OAGIS Common Class Libraries

T:\oagis\9.0\Resources\Components\Common

Name ▲

CodeLists.xsd
Components.xsd
Fields.xsd
Meta.xsd

67

OAGIS Core Component Class Libraries

OAGIS Financial Class Libraries

T:\oagis\9.0\Resources\Components\Financial

Name ▲
📁 iso20022
📄 Components.xsd

ISO 20022 Financial Class Libraries
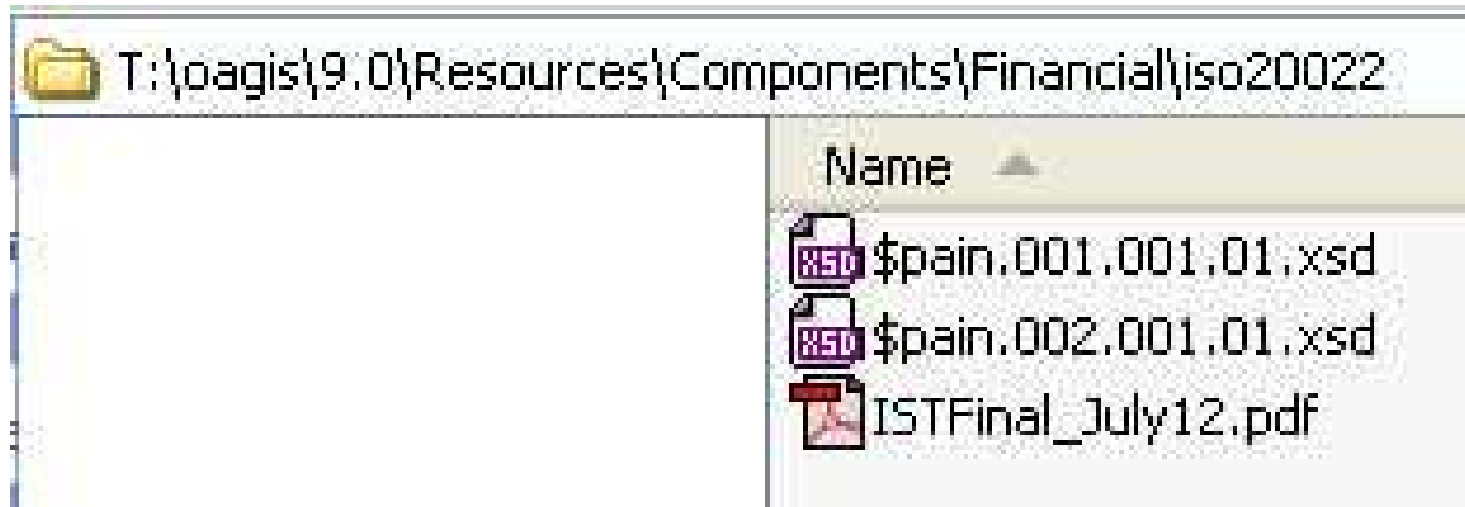
OAGIS Operational Class Libraries

T:\oagis\9.0\Resources\Components\Operational

Name

CRMComponents.xsd
LogisticsComponents.xsd
ManufacturingComponents.xsd
OrderManagementComponents.xsd

71

Let's take a look!!

QUESTIONS
ANSWERS