

The MarNIS Architecture

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Content

- The architecture
 - Overall information
 - Content and establishment approach
- Definition of concepts by means of the architecture elements
 - Examples
- If time and interest I can also show some details (browse through the hierarchy of models, etc.)



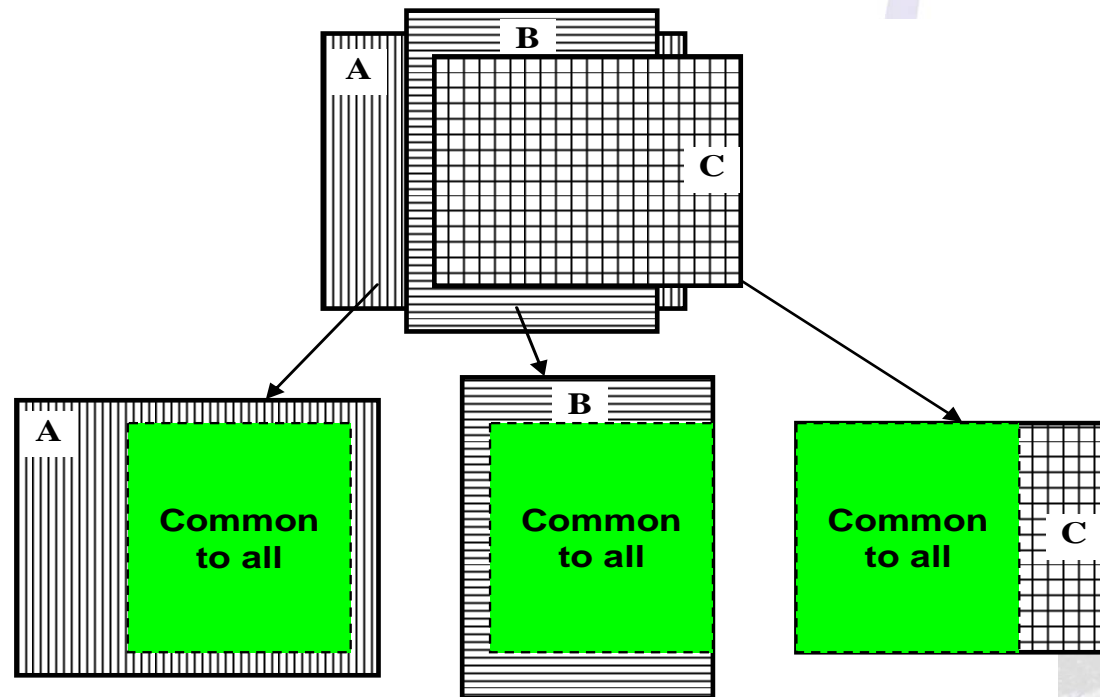
The MarNIS architecture

- A total picture of maritime traffic and transport to arrange for better solutions
 - The context in which the solutions shall operate
 - Relations and dependencies
- Independent of organisation and local/regional ways of doing things
- Formal definitions and specifications
 - Structured approach
 - Models
 - Consistency
- Support implementation of solutions
- Further discussions about solutions will be required, and such discussions may be supported by the architecture
- Shows the maritime sector as a part of the total transport sector
 - Arrange for co-modal transport
 - Achieve synergies



The architecture must be independent of local ways of doing things

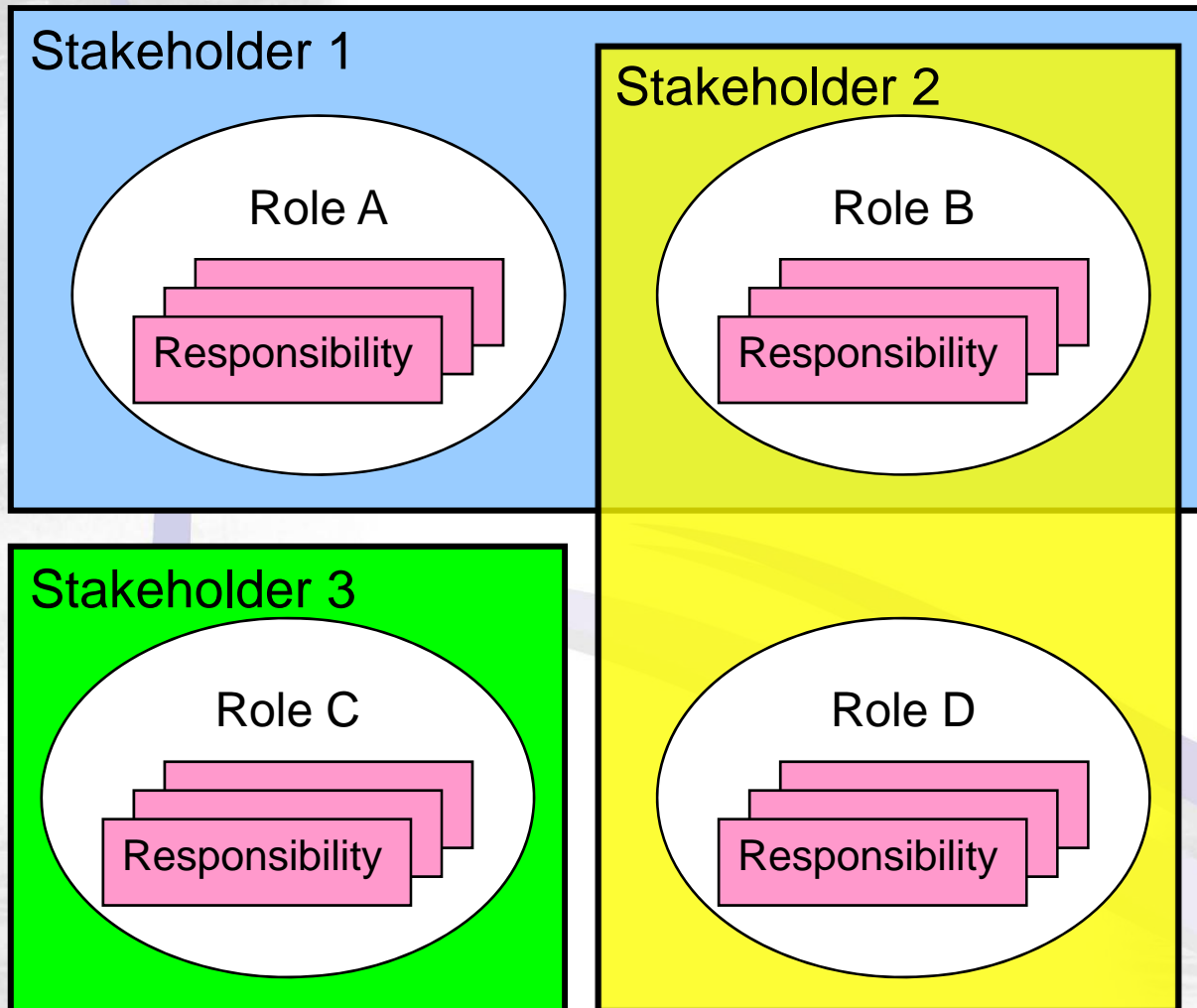
- Different regions and organisations have different solutions
- Some core responsibilities will always be present
- Support local differences through focusing on these responsibilities



Responsibility centric architecture
A role represents unique sets of responsibilities



Roles

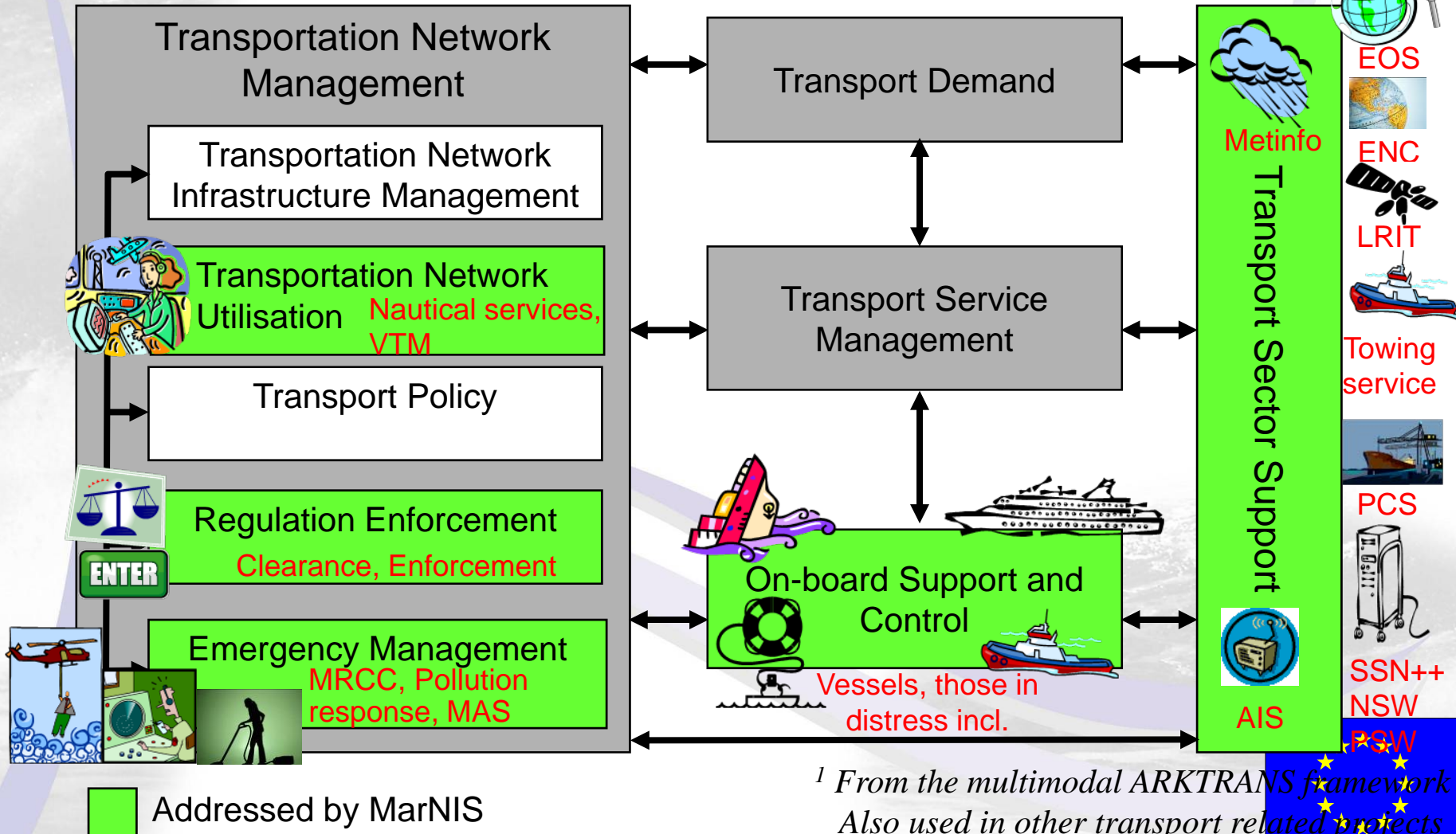


- The architecture uses roles instead of stakeholders
- Represent unique sets of responsibilities
- Independent of organisation and local or regional ways of doing things
- Support Pan-European solutions

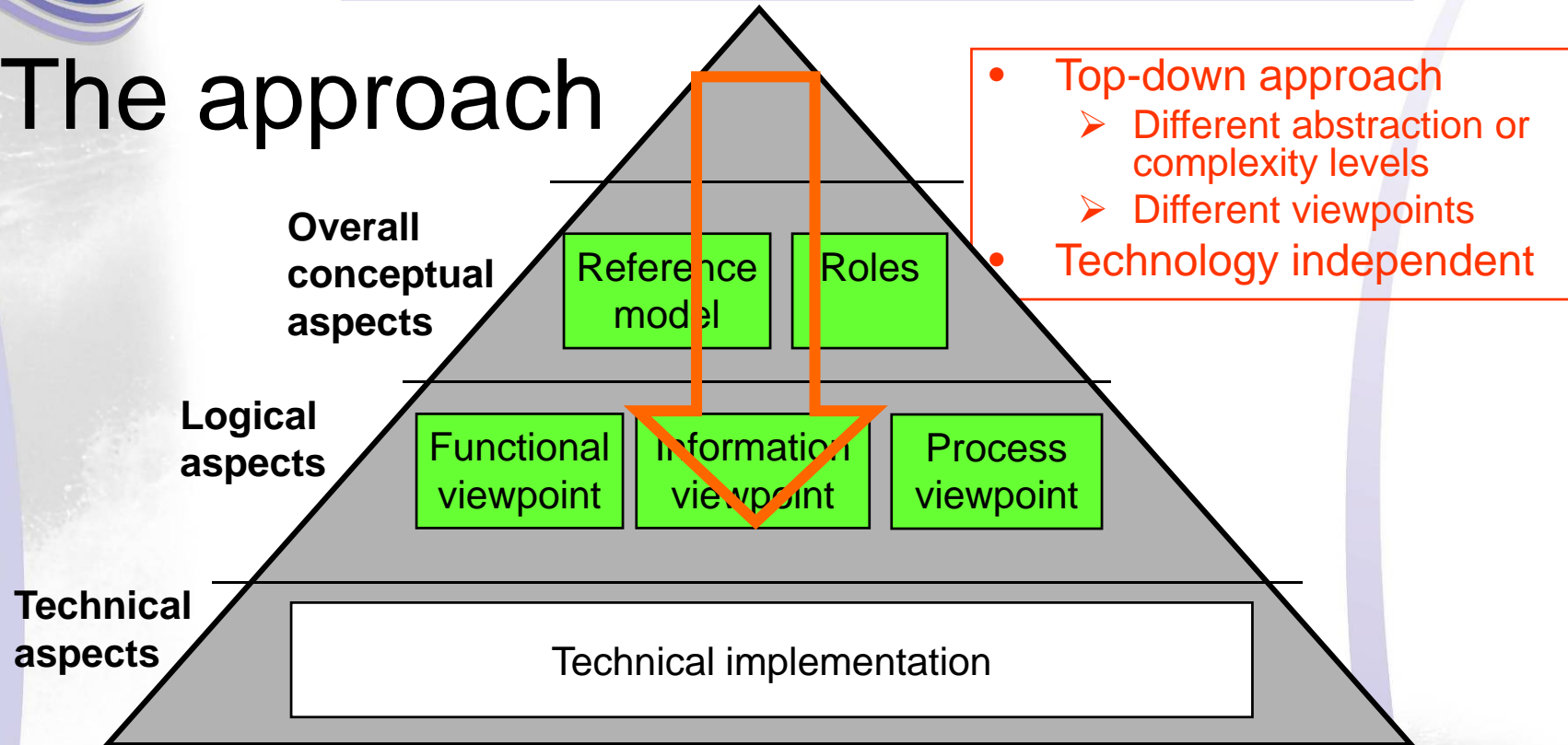


Facilitates synergies between projects, activities and transport modes.
Shows how MarNIS fits into a wider context (e.g. co-modal transport chains)

Reference Model¹



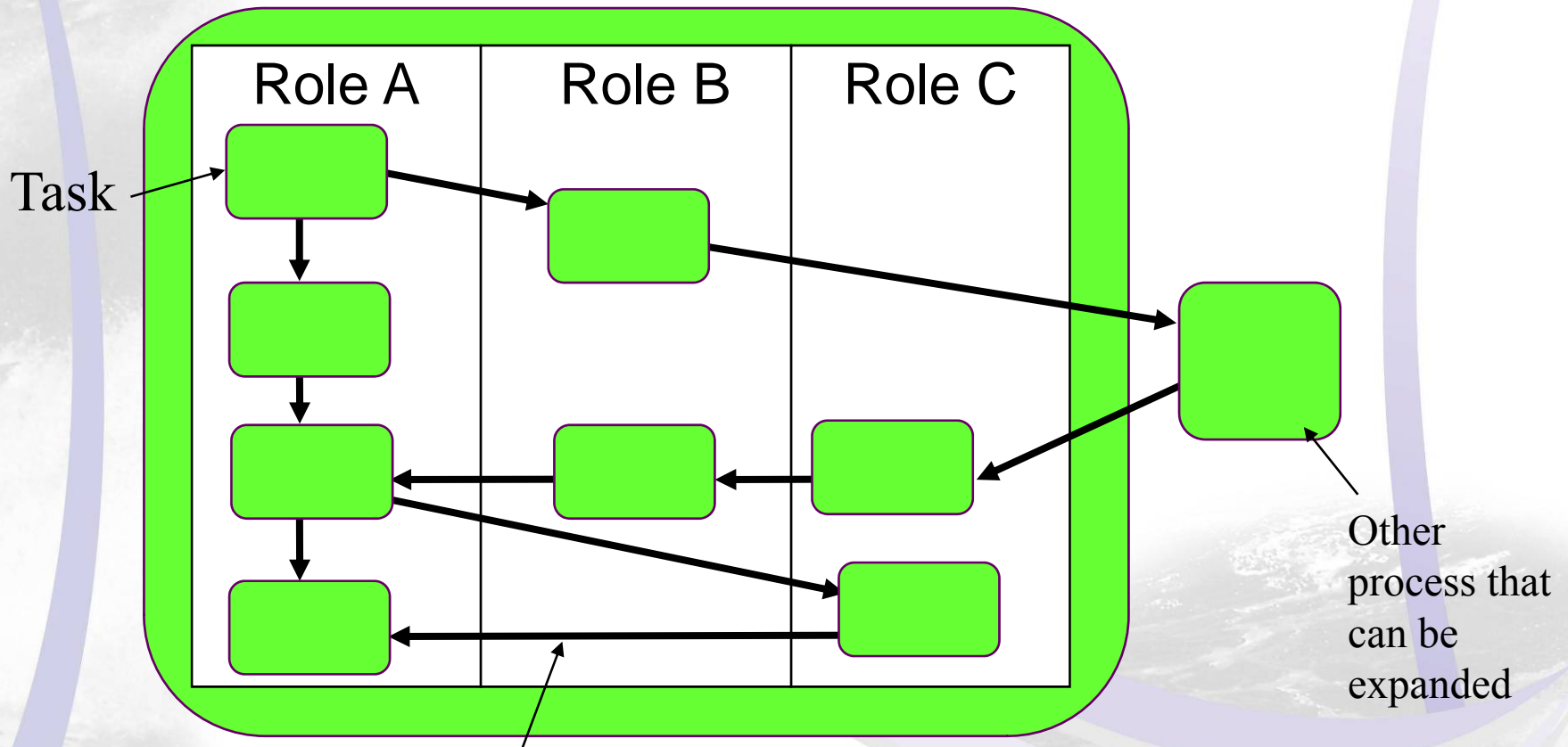
The approach



- For each responsibility domain of the Reference Model
 - Roles with responsibilities (one role belongs to just one domain)
- For each Role
 - Tasks that contributes to the fulfilment of the responsibilities
- Processes define how to fulfil responsibilities
 - How tasks are interact/collaborate (information exchange)
- Information elements

Processes

Defined by means of activity diagrams in swim lanes



Information exchange between tasks and roles

Cargo o/v

- + CrewEffectItem
- + DGInfo
- + DutiableCrewEffects
- + GeneralDescriptionOfCargo
- + GeneralDescriptionOfDG
- + NumberOfPersonsOnBoard
- + Stores
- + StoresItem

Clearance Status

- + ClearanceStatus
- + ClearanceStatusType

Class and Certificates

- + ISMCertificate
- + ISSCertificateStatus
- + SafetyManagementCertificate
- + Certificate
- + CertificateCodeType
- + ClassAndCertificates
- + DeclarationOfHealthInfo
- + FlagRegistration
- + GasFreeCertificate
- + RegistrationCertificate
- + Ship Class

Crew Data

- + CrewOverview
- + CrewData
- + CrewMemberData
- + OnBoardDutyCodeType
- + OnBoardDutyCodeType_EPC2
- + OnBoardDutyType
- + ShortCrewMemberData

Core Data

- + ReportPosition
- + ReportPositionFix
- + ReportTime
- + Amount
- + Cargo Location
- + CertificateStatusType
- + ContainerLocation
- + ContactInfo
- + CoordinateType
- + CountryCode
- + FeederLocation
- + GenderType
- + IdDocumentType
- + Location
- + NameType
- + OtherLocation
- + Party
- + PersonIdDocumentType
- + Port
- + QuantityType
- + QuantityUnitType
- + ROROLocation
- + TankerLocation
- + ebXML Core Components

Dangerous Cargo Data

- + EmergencyDescription
- + DGSafetyDataSheet
- + PackingGroupType
- + PollutionCodeType
- + UNClassType
- + UNNumberType

General Cargo Data

- + ContainsDangerousGoods
- + BulkCargoHandling
- + CargoData
- + CargoItem
- + CargoItemOrigin
- + CargoStatisticsData
- + Cargo Type
- + GoodsType
- + LocationCodeType
- + NonCargoType
- + OnBoardLocationType
- + SpecialCargoDetails
- + TransportUnitInfo

Passenger Data

- + AssistanceRequests
- + ExtendedPassengerMemberData
- + PassengerData
- + SimplifiedPassengerMemberData

Security

- + CurrentShipSecurityLevel
- + ISPSAble
- + ISSCInformation
- + OtherSecurityInformation
- + SecurityInfoShipToShip
- + SecurityLevelInPort
- + SecurityLevelInPreviousPorts
- + ShipToShipActivity

Information elements for information exchange with authorities (1:2)

Port Entry/Departure Notifications (PEN/PDN)

Port Entry/Departure Profiles (PEP/PDP)



Services

- + Bunkers
- + GeneralServiceRequest
- + Pilots
- + Service
- + Tug

Ship Contacts

- + AgentContactInPort
- + Charterer
- + Company
- + CompanySecurityOfficer
- + InmarsatCallNumber
- + NameOfMaster
- + PaymentsContacts
- + ShipContacts
- + ShipOwner

Ship ID

- + CallSign
- + FlagState
- + Id
- + IMONumber
- + MMSINumber
- + ShipID
- + ShipName
- + ShipRegistration

Ship Particulars

- + INFShipClass
- + ShipType
- + AccommodationLadderLocation
- + AdditionalDetailsForShipHandling
- + Beam
- + CargoAreaLength
- + CargoGearDescription
- + DeadWeight
- + DepartureDraught
- + DoubleBottom
- + DoubleBottomType
- + GrossTonnage
- + IceClass
- + IceClassId
- + IceClassType
- + IceClassTypeBaltic
- + IceClassTypeACS
- + INFShipClassType
- + LengthOverall
- + MooringLinesDescription
- + NetTonnage
- + OperationalConditionOfEquipment
- + ShipParticulars
- + ShipTypeType
- + SummerDraught

Vessel Operation Data

- + IncidentOrAccidentDischarge
- + IncidentOrAccidentSeverity
- + AirDraught
- + ArrivalDraught
- + DistanceShipSideToHatch
- + DistanceWaterLineToFirstHatch
- + FuelType
- + IncidentOrAccidentDischargeType
- + IncidentOrAccidentSeverityType
- + IncidentOrAccidentType
- + LastExpandedPSCInspectionDate
- + PlannedOperations
- + PurposeOfCallType
- + RemainingOnBoardBunkers
- + TankCondition
- + TankConditionInformation
- + TankStatusType

Voyage Data

- + ATA
- + ATD
- + ATP
- + CurrentPort
- + ETA
- + ETD
- + ETP
- + PositionType
- + PreviousVoyageNumber
- + VoyageNumber
- + ArrivalBerth
- + Berth
- + CommercialVoyageIdentification
- + ConsecutivePortCallList
- + DepartureBerth
- + LastPortOfCall
- + NextPortCall
- + PeriodOfStay
- + PortOfArrival
- + PortOfDeparture
- + PortOfDestination
- + PortOfOrigin
- + Position
- + PreviousPortCallList
- + TimeEstOrAct
- + VoyageData
- + VoyageType

Waste

- + Waste
- + WasteDeliveryIndicator
- + WasteInformation
- + WasteList
- + WasteType

Information Services

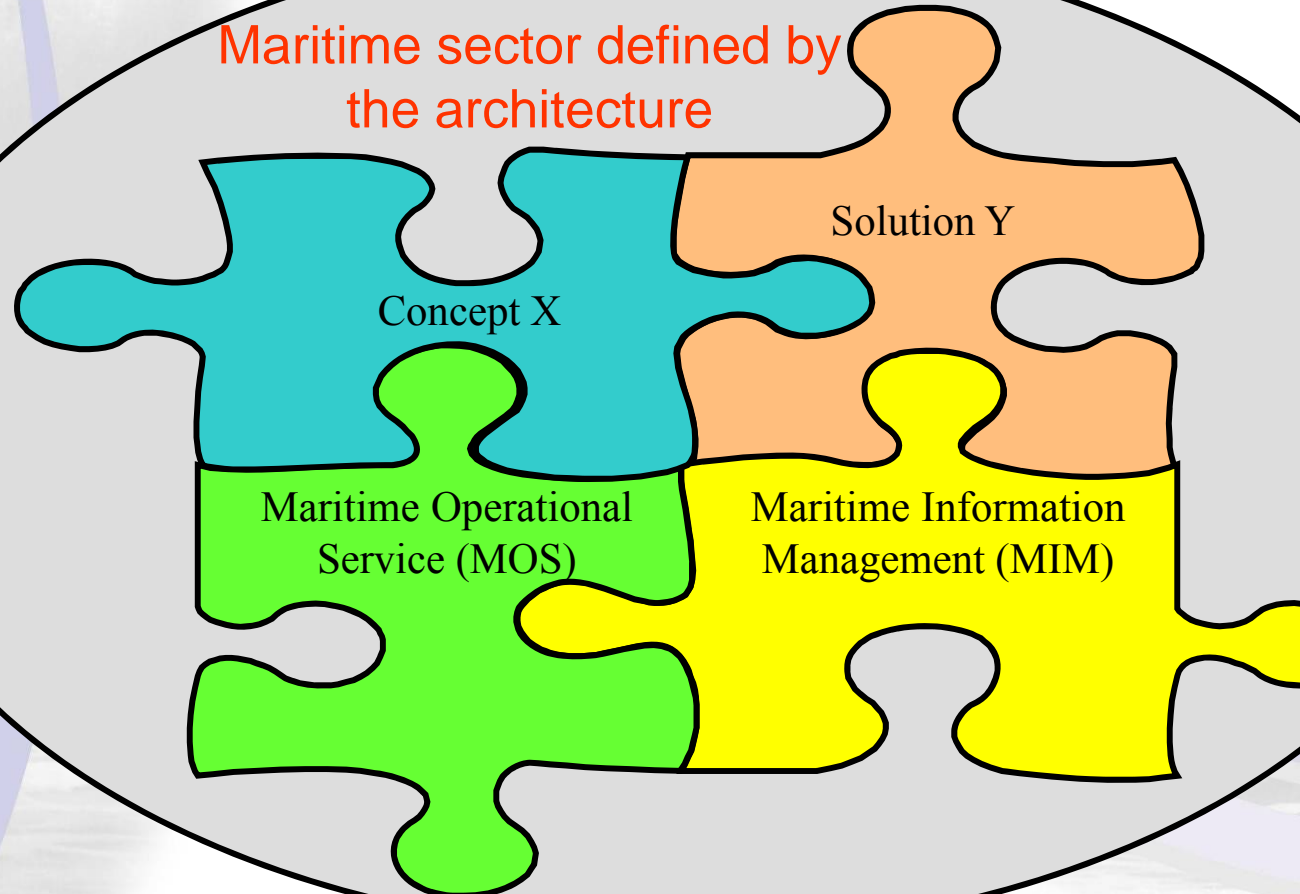
Information elements for information exchange with authorities (2:2)

Further discussed and refined in the ISO TC 8 standardisation committee (ISO 28005 on Electronic Port Clearance)



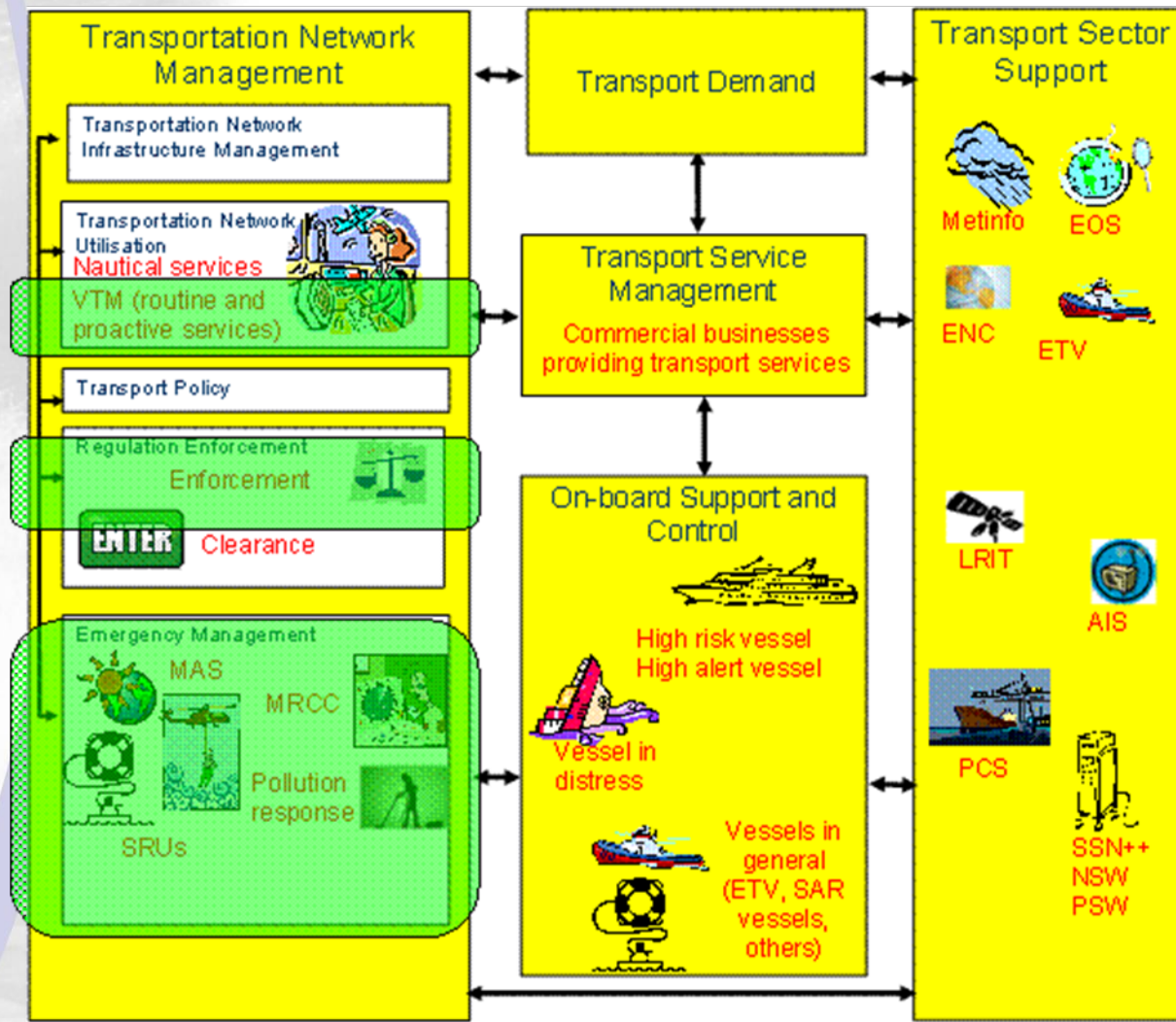
Concepts defined by means of the architecture

Maritime sector defined by the architecture

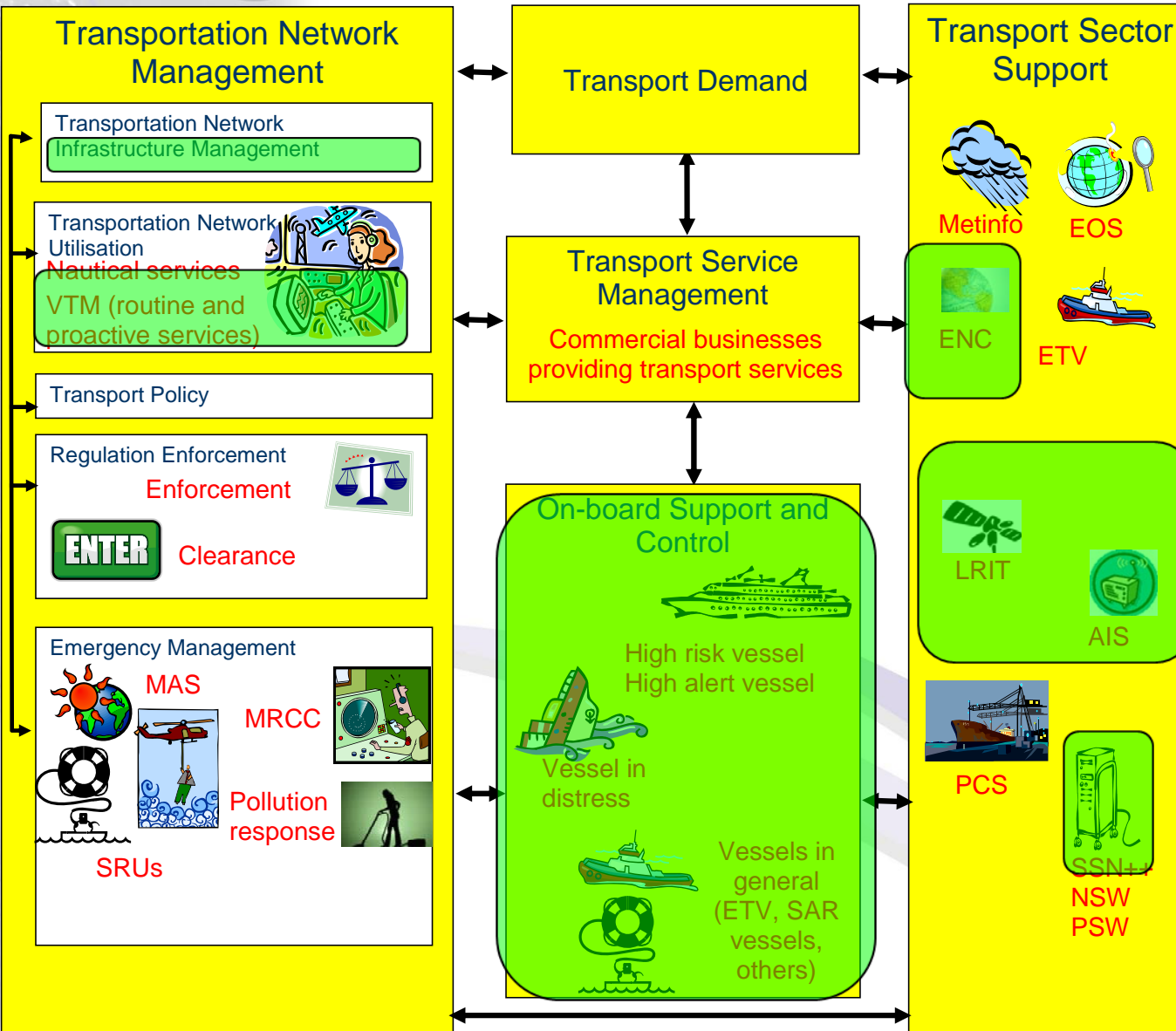


- The concepts fit with other concepts and solution
- They are a part of a total picture
- They are well defined

The MOS (Maritime Operational Service) concept



- Define the roles involved for each relevant area
- Define the tasks involved for each role
- Define the related processes (with interactions)



The architecture can support the definition of eNavigation

- Will arrange for consistency and clarity
- Will support discussions and decisions
- (Should be defined in a functional and logical way - Not by referring to technologies or hardware)

Just an example
Probably not correct



Conclusion

- The MarNIS architecture puts the MarNIS solutions into a context
- Provides formal definitions and specifications that
 - Are independent of organisation and local or regional ways of doing things
 - Support accurate definitions and common understanding
 - Support implementation of interoperable solutions in different countries and regions
- The architecture can be used as a tool for discussions and specifications when new concepts and solutions are to be defined

