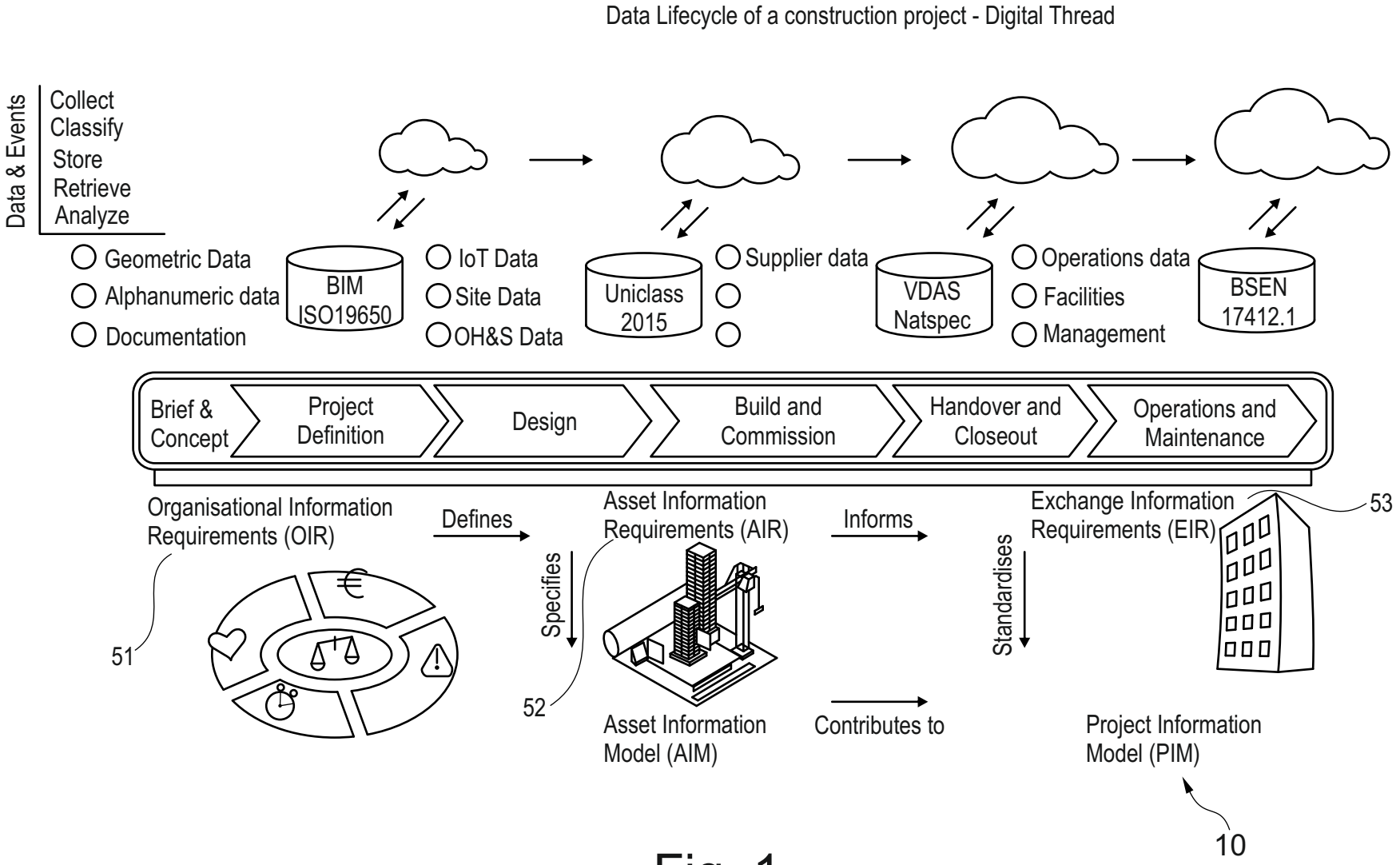

Data Lifecycle of a construction project - Digital Thread
Data & Events
Collect
Classify
Store
Retrieve
Analyze
Geometric Data
Alphanumeric data
Documentation
BIM ISO19650
IoT Data
Site Data
OH&S Data
Uniclass 2015
Supplier data
VDAS Natspec
Operations data
Facilities
Management
BSEN 17412.1
Brief & Concept
Project Definition
Design
Build and Commission
Handover and Closeout
Operations and Maintenance
Organisational Information Requirements (OIR)
Defines
Asset Information Requirements (AIR)
Informs
Exchange Information Requirements (EIR)
53
Specifies
Standardises
51
52
Asset Information Model (AIM)
Contributes to
Project Information Model (PIM)
10

Fig. 1

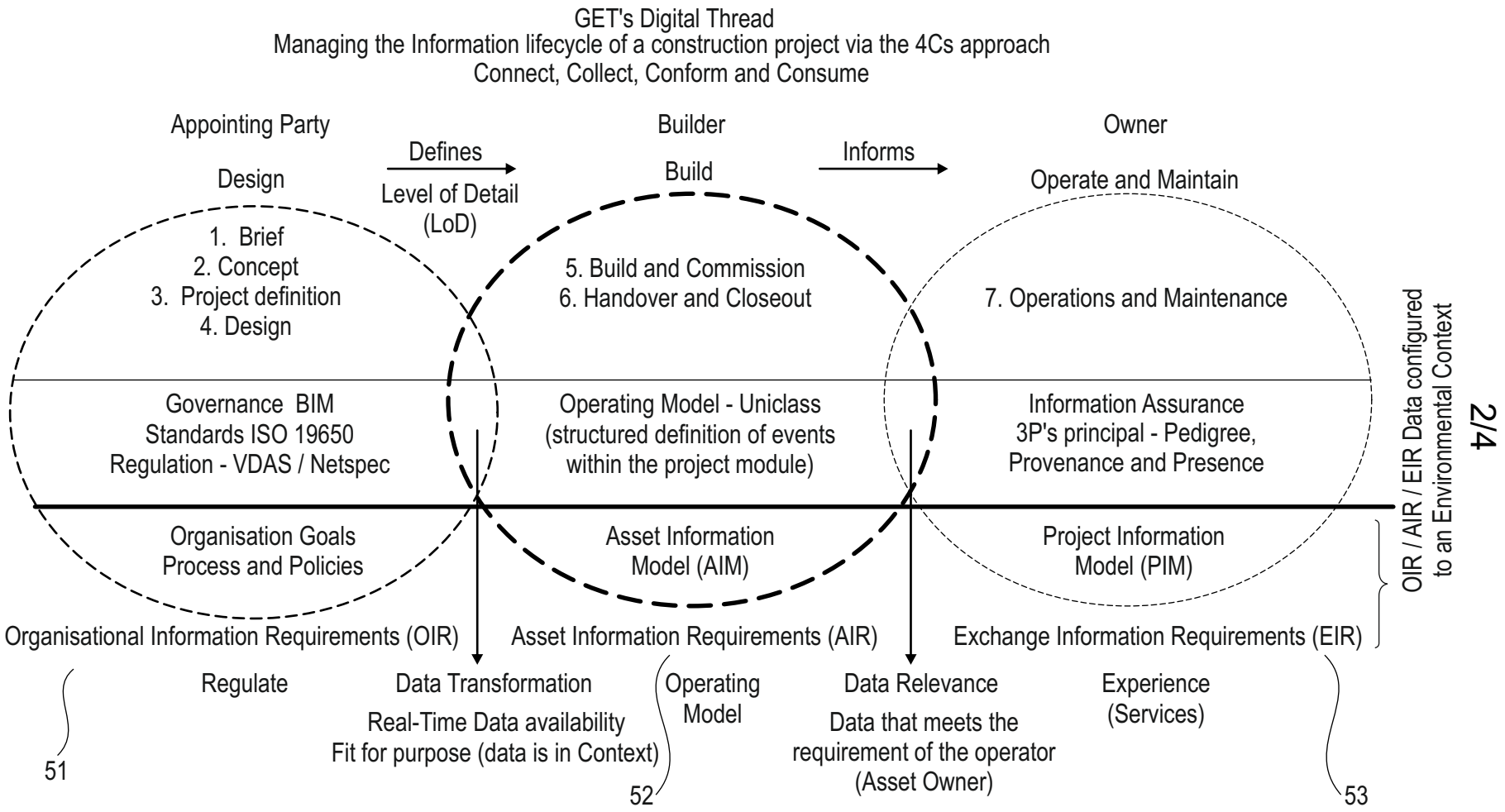

GET's Digital Thread
Managing the Information lifecycle of a construction project via the 4Cs approach
Connect, Collect, Conform and Consume
Appointing Party
Design
Defines
Level of Detail
(LoD)
Builder
Build
Informs
Owner
Operate and Maintain
1. Brief
2. Concept
3. Project definition
4. Design
5. Build and Commission
6. Handover and Closeout
7. Operations and Maintenance
Governance BIM
Standards ISO 19650
Regulation - VDAS / Netspec
Operating Model - Uniclass
(structured definition of events
within the project module)
Information Assurance
3P's principal - Pedigree,
Provenance and Presence
Organisation Goals
Process and Policies
Asset Information
Model (AIM)
Project Information
Model (PIM)
OIR / AIR / EIR Data configured
to an Environmental Context
Organisational Information Requirements (OIR)
Asset Information Requirements (AIR)
Exchange Information Requirements (EIR)
Regulate
Data Transformation
Real-Time Data availability
Fit for purpose (data is in Context)
Operating
Model
Data Relevance
Data that meets the
requirement of the operator
(Asset Owner)
Experience
(Services)
51
52
53

Fig. 2

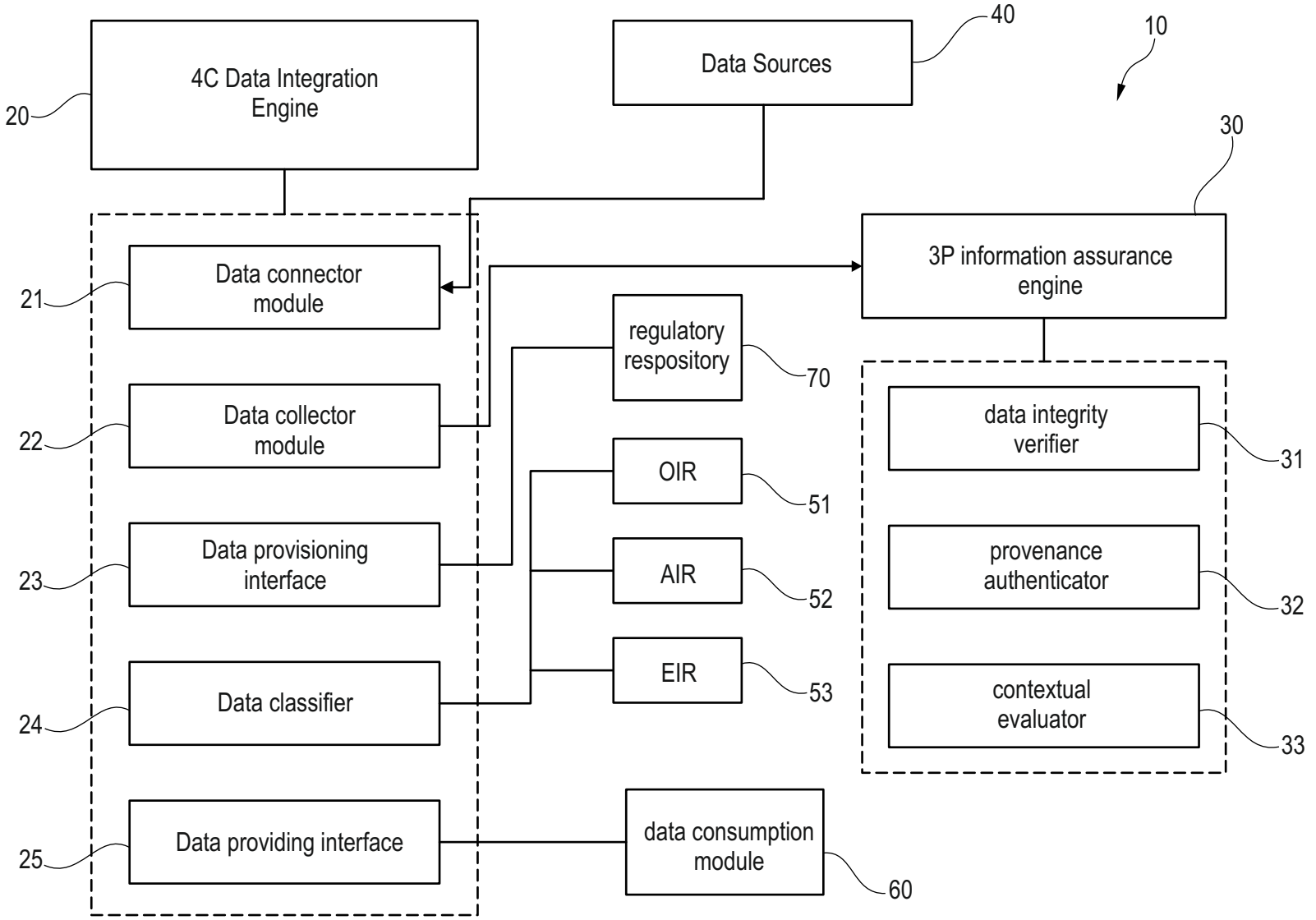

4C Data Integration Engine
20
Data Sources
40
10
30
3P information assurance engine
Data connector module
21
Data collector module
22
Data provisioning interface
23
Data classifier
24
Data providing interface
25
regulatory respository
70
OIR
51
AIR
52
EIR
53
data integrity verifier
31
provenance authenticator
32
contextual evaluator
33
data consumption module
60

Fig. 3

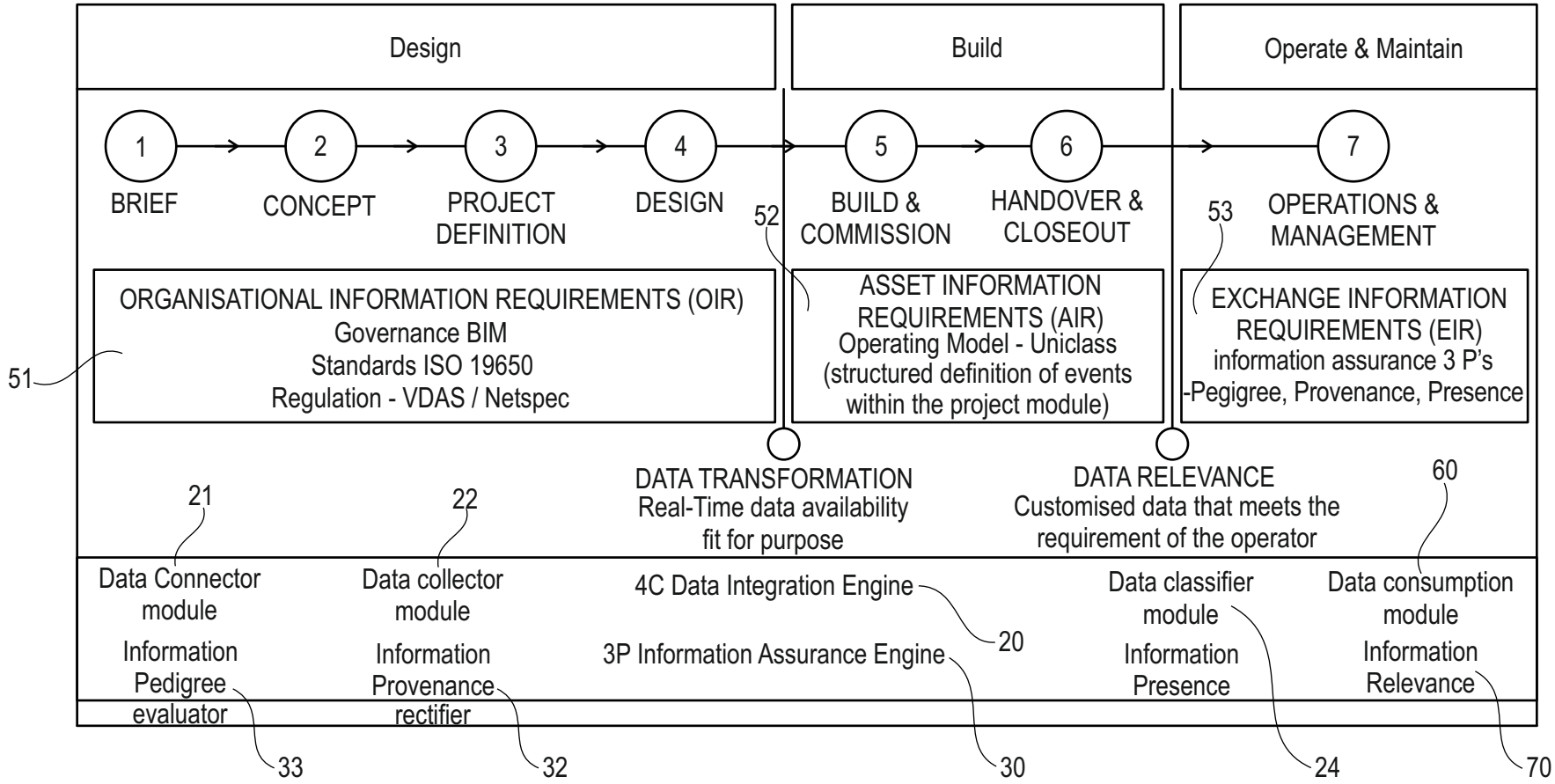

Design
Build
Operate & Maintain
1
2
3
4
5
6
7
BRIEF
CONCEPT
PROJECT DEFINITION
DESIGN
BUILD & COMMISSION
HANDOVER & CLOSEOUT
OPERATIONS & MANAGEMENT
52
53
51
ORGANISATIONAL INFORMATION REQUIREMENTS (OIR)
Governance BIM
Standards ISO 19650
Regulation - VDAS / Netspec
ASSET INFORMATION REQUIREMENTS (AIR)
Operating Model - Uniclass
(structured definition of events within the project module)
EXCHANGE INFORMATION REQUIREMENTS (EIR)
information assurance 3 P's
-Pegigree, Provenance, Presence
DATA TRANSFORMATION
Real-Time data availability
fit for purpose
DATA RELEVANCE
Customised data that meets the requirement of the operator
21
22
60
Data Connector module
Data collector module
4C Data Integration Engine
20
Data classifier module
Data consumption module
Information Pedigree evaluator
Information Provenance rectifier
3P Information Assurance Engine
Information Presence
Information Relevance
33
32
30
24
70

Fig. 4