

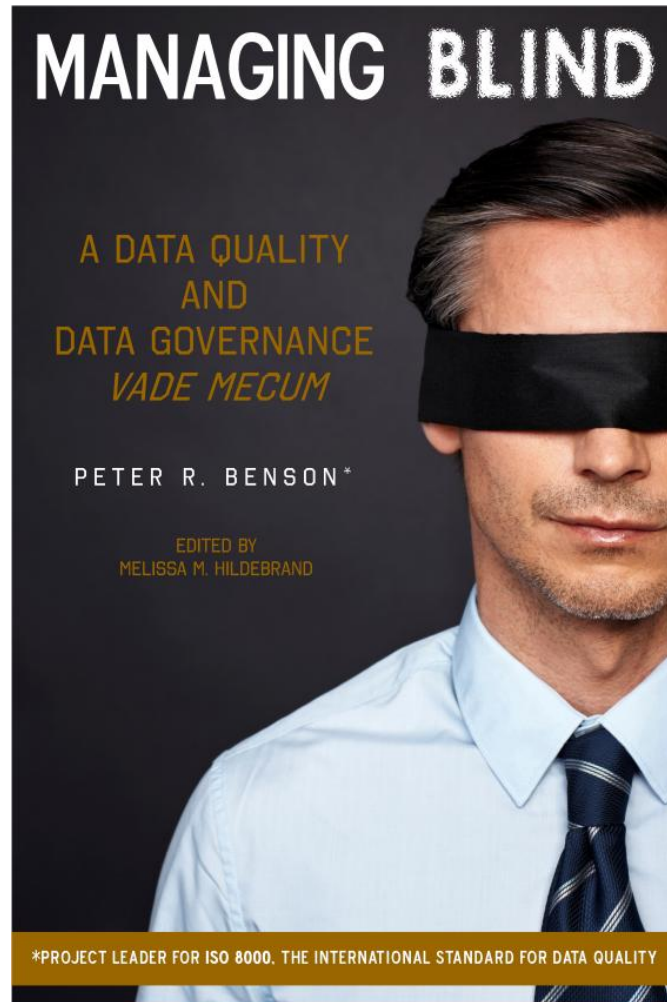


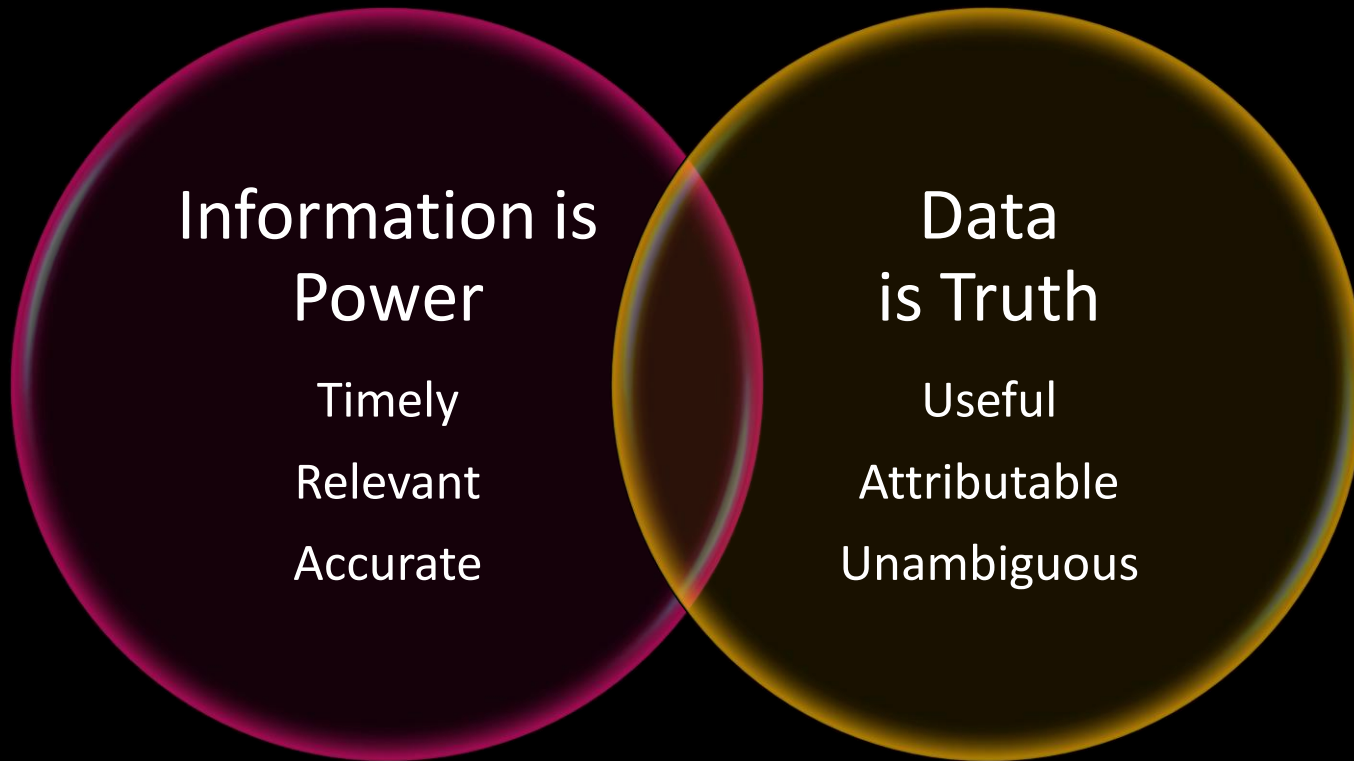
The Impact of Data Governance and Data Quality on MDM

Peter R. Benson, ISO 8000 MDQM Certified

Project leader for ISO 22745 and ISO 8000

Introductions



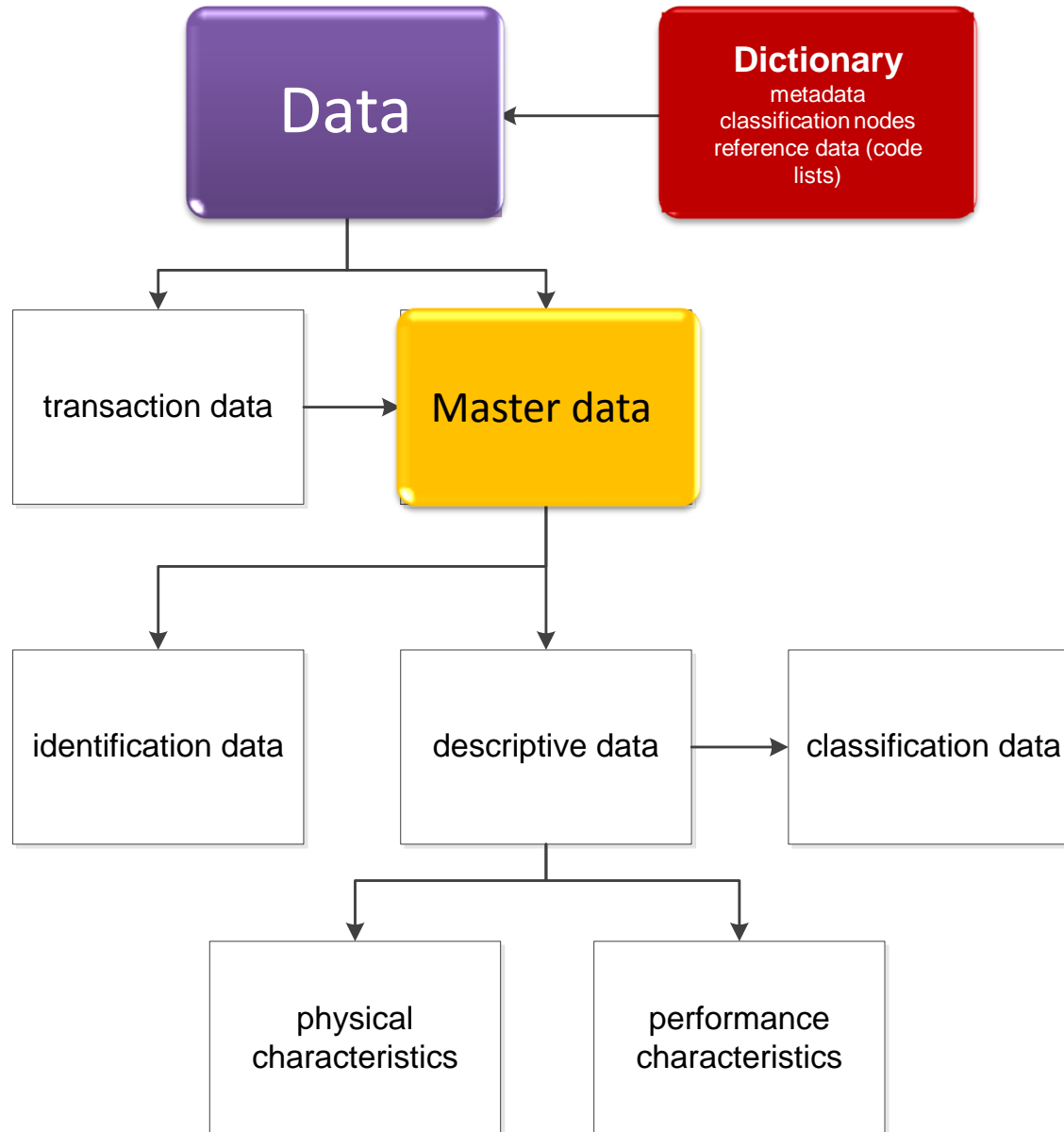


Axiom

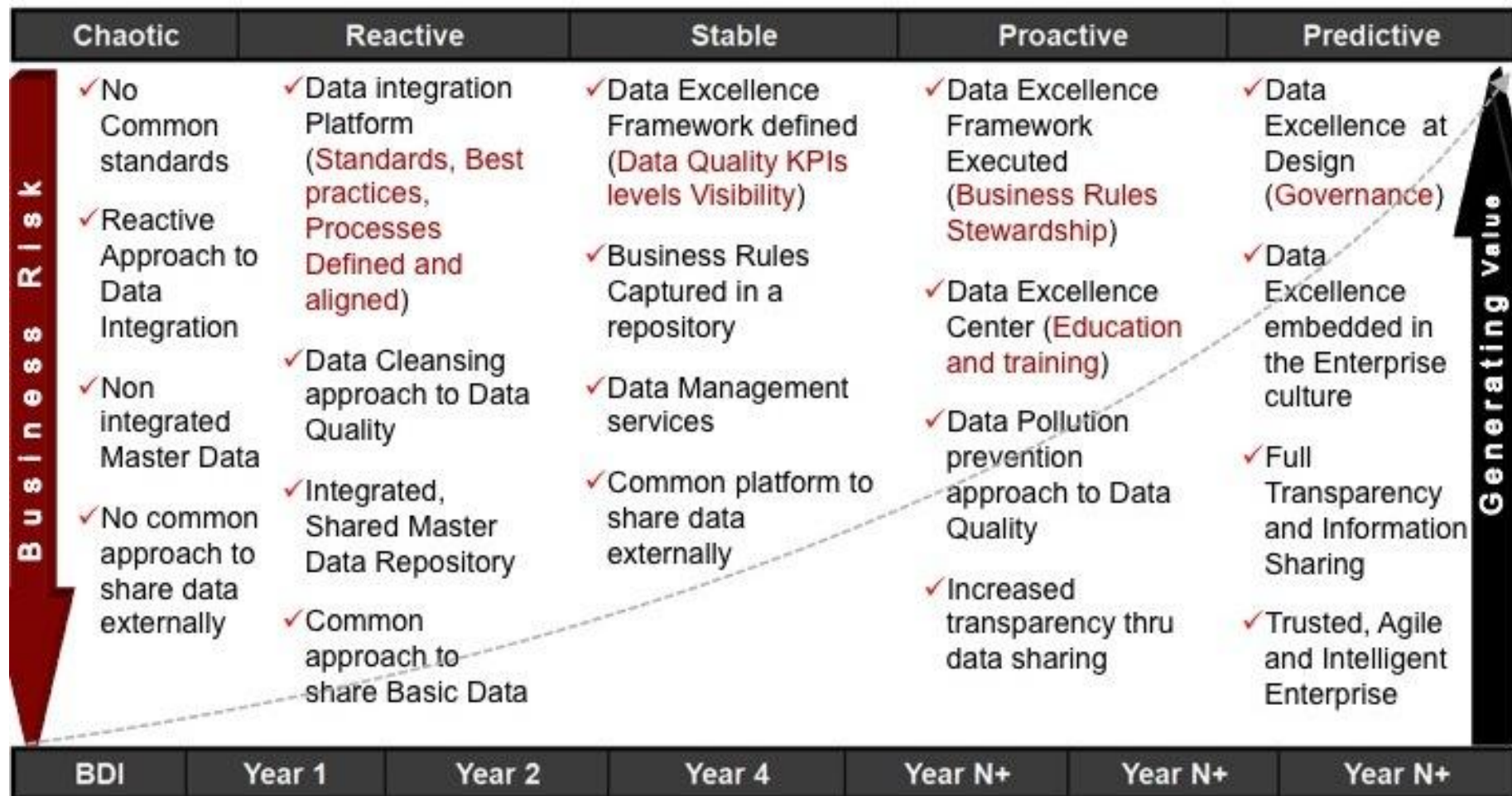
A statement or proposition that is regarded as being established, accepted, or self-evidently true.

Quality information can only be based on quality data

Taxonomy of Data



Data Maturity Model




Global Data Excellence

Maximize the Business Value of Enterprise Data

Data Governance is about Policies

gov·ern

/ˈgɒvərn/ 

Verb

1. Conduct the policy, actions, and affairs of (a state, organization, or people).
2. Control, influence, or regulate (a person, action, or course of events).

Synonyms

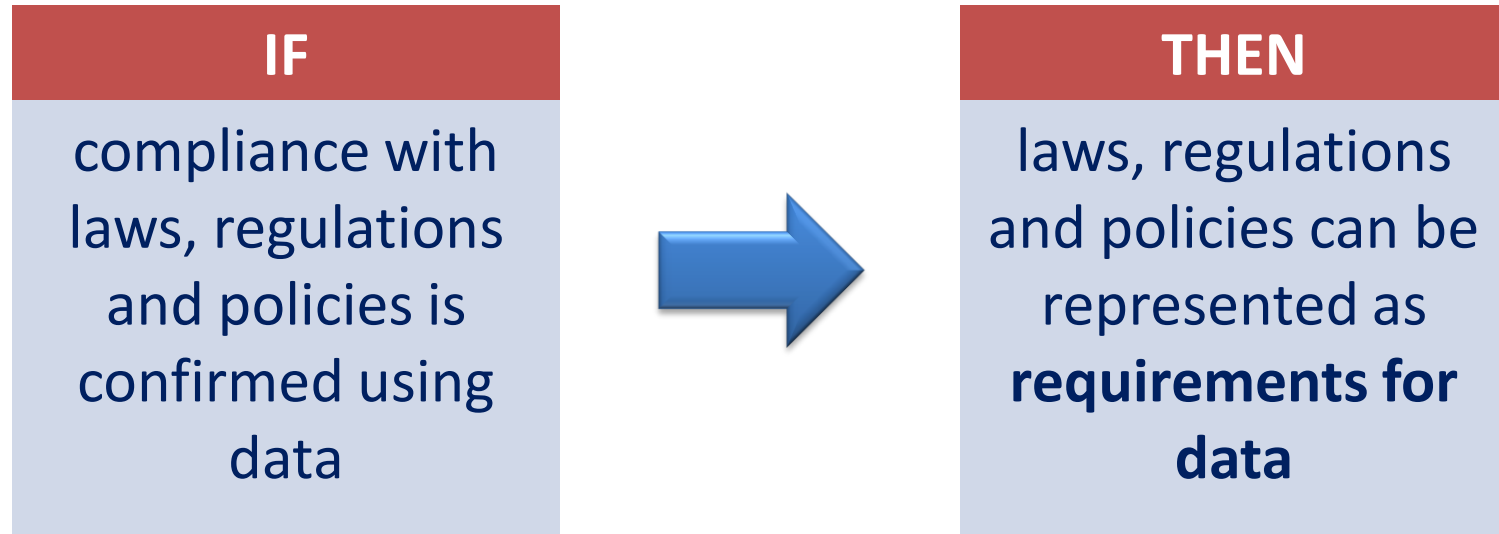
rule - control - manage - direct - administer - steer



Policies must be stated so that they can be referenced



Defining Requirements for Data



ISO 22745 is the international standard for stating requirements for data using an open technical dictionary

ISO 8000 quality data is data that meets stated requirements

What does "Quality" Mean?



When you order seafood from **Quality** Fresh Seafood, you can be confident that you are receiving the very best **quality** of seafood and delivery.



**Quality
Service
You Can
Count On!**



3.1.1

quality

degree to which a set of inherent **characteristics fulfils requirements**

ISO 9000:2005(E)

3.1.2

requirement

need or expectation that is stated, generally implied or obligatory

ISO 9000:2005(E)

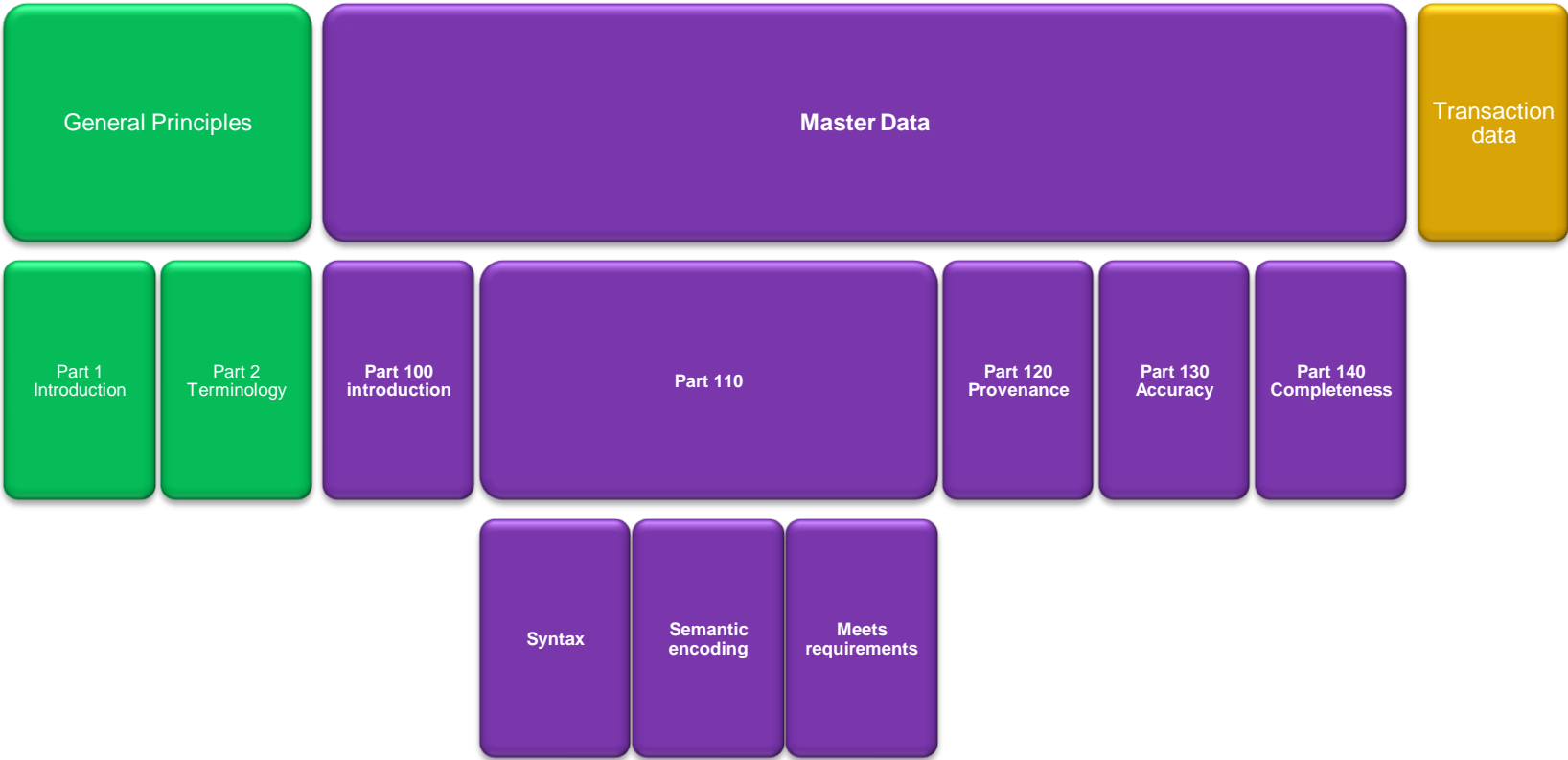
Quality is about meeting requirements

Quality data: data that meets stated requirements

nothing more and nothing less!

(data that exceeds stated requirements does not increase the quality of the data)

ISO 8000



ISO 8000 Quality Data



Data that meets stated requirements



Data that is portable

(defined syntax and defined semantic encoding)

ISO 8000 quality data is portable data that meets stated requirements

- ECCMA recommends that companies own and control their own corporate dictionary, data requirements and description rules.
- **Data coded using a licensed dictionary or validated using licensed data requirements or created using licensed description rules is subject to the terms of the license.**

Intrinsic and Extrinsic Data Quality

“Mass is an intrinsic property of any physical object, weight is an extrinsic property that varies depending on the strength of the gravitational field in which the respective object is placed.”

Intrinsic (internal) data quality characteristics

Characteristic that you can evaluate by looking at the data itself, (expectation that is generally implied)

- ✓ Is the data complete: *what is the % of empty cells?*
- ✓ Is the data consistent: *are the values consistent in their formatting?*

Extrinsic (external) data quality characteristic

ISO 8000 Quality Data:

- ✓ Is the syntax **referenced** – is the data compliant with the syntax?
- ✓ Is the semantic encoding **referenced** – is the data encoded?
- ✓ Is the data requirement **referenced** – does the data meet the requirement?

Master Data Management

The Front End

Quick Add a New Customer

Contact name	<input type="text" value="First"/>	<input type="text" value="Last"/>
Company	<input type="text"/>	
Customer code	<input type="text"/>	
Customer group	<input type="text" value="All Customers"/>	
Phone	<input type="text"/>	
Mobile	<input type="text"/>	
Email	<input type="text"/>	

The Back End

Key	Customer Name	Postal Address	Tax ID
131	Thomas Stearns Eliot	1915 J. Alfred Prufrock Lane, Wasteland, TX 79526	26091888
132	Thomas Stearns Eliot	1915 J. Alfred Prufrock Lane, Wasteland, TX 79526	26091888
133	T.S. Eliot	1917 J. Alfred Prufrock Lane, Wasteland, TX 79526	
134	T.S. Eliot	Wasteland, Texas	26091888
211	J.D. Salinger	Holden Caulfield Highway, Agerstown, PA 19102	19191951
212	Jerome D. Salinger	Holden Caulfield Highway, Agerstown, PA 19102	
213	J. David Salinger	Holden Caulfield Highway, Agerstown, PA 19102	19191951
214	Jerome Salinger	Holden Caulfield Highway, Agerstown, PA 19102	
215	David Salinger	Holden Caulfield Highway, Agerstown, PA 19102	19191951
151	Franz Joseph Haydn	94 Surprise Symphony Stravenue, Austria, CO 80467	17321809
152	Franz Joseph Haydn	94 Surprise Symphony Stravenue, Austria, CO 80467	17321809
153	Joseph Haydn	45 Farewell Symphony Stravenue, Austria, CO 80467	
154	Papa Haydn	Austria, CO 80467	17321809
251	Lorraine Baines	55 Enchantment Sea Park, Hill Valley, CA 94941	19382015
252	Lorraine Baines-McFly	85 George Douglas Heights, Hill Valley, CA 94941	
253	Lorraine McFly	Hill Valley, California	19382015

Quality ERP Descriptions



52368965412 – Tire Bridgestone
435/95 R25



56329845 – Tyre BS 435/R25 Standard
Purpose E3 2 Star Radial



125435 – Bridge Stone 25inch 435/95



965123465 – Tyre Bridgestone Part
Number 12345



Standardised Long Description:

Tire: Pneumatic, Vehicular: Service Type for Which Designed: Loader Tire Rim Nominal Diameter: 25'
Tire Width: 445mm Aspect Ratio: 0.95 Tire Ply Arrangement: Radial Ply Rating: 2* Tire & Rim Association Number: E3 Tread Material: Standard Tire Air Retention Method: Tubeless Tire Load Index and Speed Symbol: NA Tread Pattern: VHB TKPH Rating: 80

Standardised Short Description:

Tire Pneumatic: Loader 25' 445mm 0.95 2*

Data is the new reality!



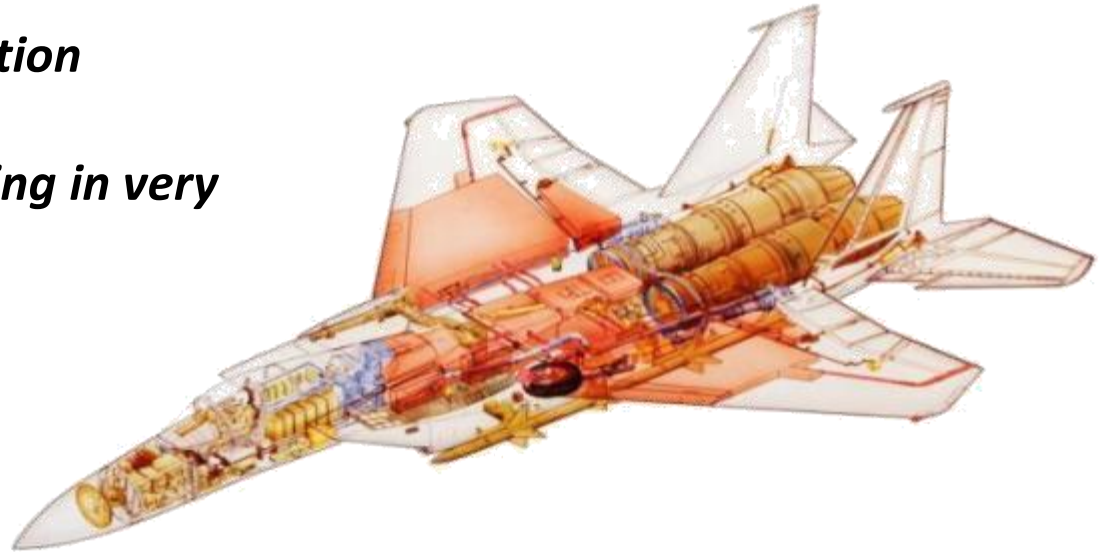
YOUR POINTING AT IT WON'T HELP - THE COMPUTER RECORDS SHOWS NONE IN STOCK.

Motivation for ISO 22745 and ISO 8000



Controlling costs requires better asset, product, component and process visibility. This is achieved through faster, better and lower cost access to authoritative characteristic data.

***“From a logistics information perspective...
an F-15 is just 171,000 parts flying in very
close formation.”***

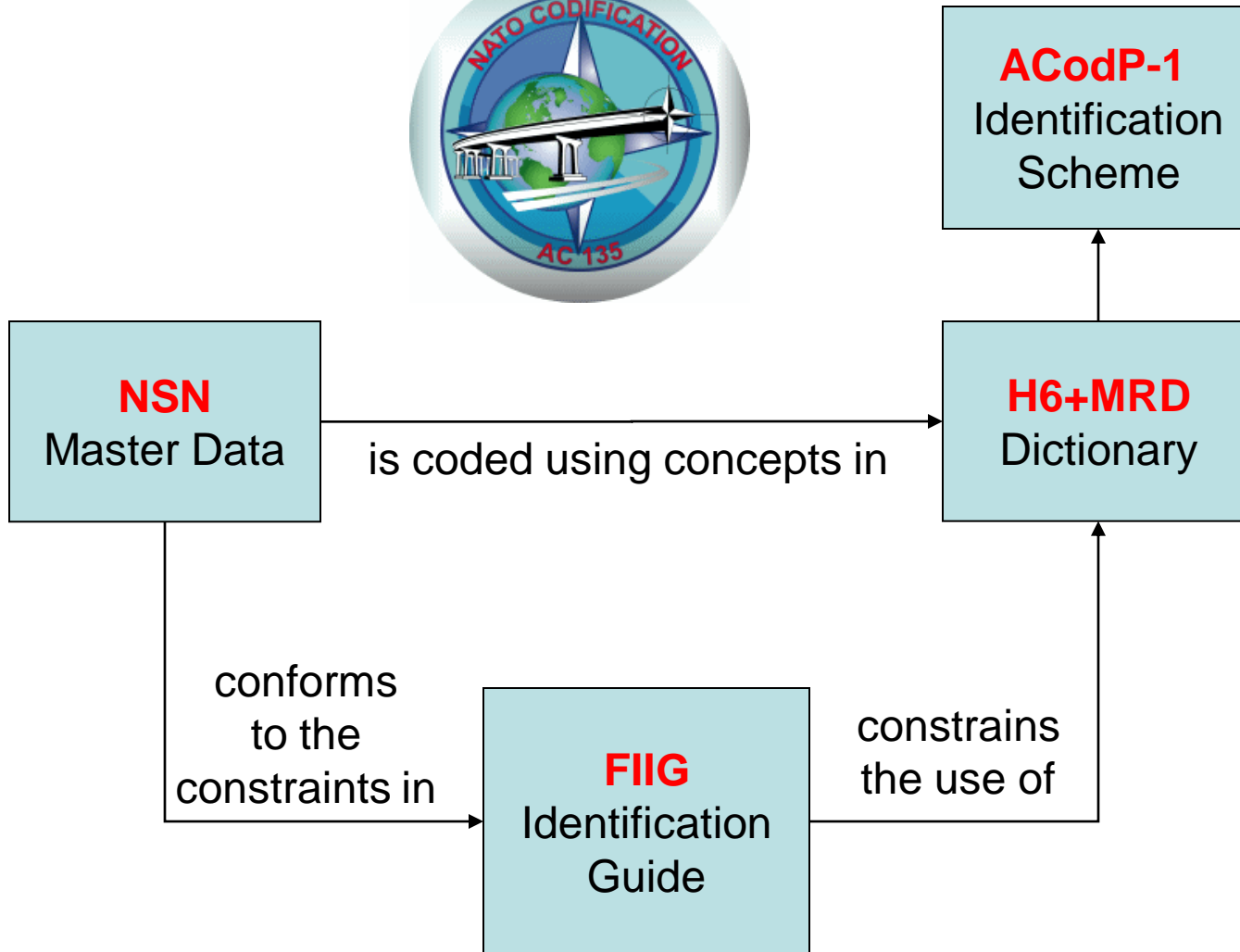


Cataloging and Standardization Act, Public Law 82-436 as codified by United States Code, Title 10, Chapter 145 – Cataloging and Standardization Sec. 2451.

(a) The Secretary of Defense shall develop a single catalog system and related program of standardizing supplies for the Department of Defense.

(b) In cataloging, the Secretary shall name, describe, classify, and number each item recurrently used, bought, stocked, or distributed by the Department of Defense, so that only one distinctive combination of letters or numerals, or both, identifies the same item throughout the Department of Defense. Only one identification may be used for each item for all supply functions from purchase to final disposal in the field or other area.

NCS Architecture

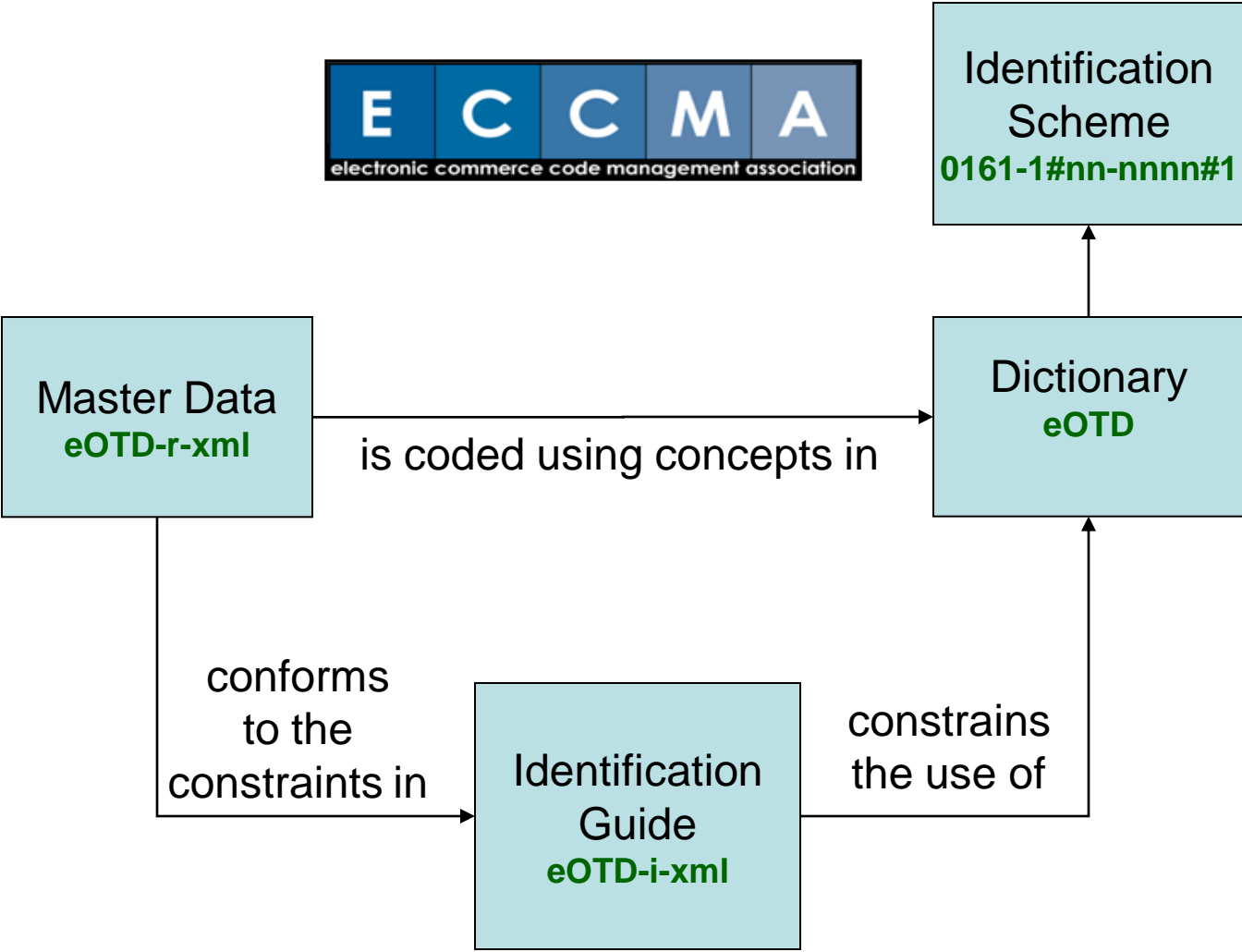


Motivation for ISO 22745 and ISO 8000



Controlling costs requires better asset, product, component and process visibility. This is achieved through faster, better and lower cost access to authoritative characteristic data.

eOTD Architecture



These are data requirements

A. U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT SETTLEMENT STATEMENT

B. TYPE OF LOAN

1. FHA	2. FmHA
3. CONN. UNHS.	4. VA
5. CONN. INS.	

8. File Number _____ 7. Loan Number _____
8. Mortgage Insurance Case Number _____

C. NOTE: This form is furnished to give you a statement of actual settlement costs. Amounts paid to and by the settlement agent are shown. Items marked "(p.o.c.)" were paid outside the closing. They are shown here for informational purposes and are not included in the totals.

D. NAME AND ADDRESS OF BORROWER: _____
E. NAME AND ADDRESS OF SELLER: _____
F. NAME AND ADDRESS OF LENDER: _____

G. PROPERTY LOCATION: _____
H. SETTLEMENT AGENT: NAME, AND ADDRESS
PLACE OF SETTLEMENT: _____
I. SETTLEMENT DATE: _____

J. SUMMARY OF BORROWER'S TRANSACTION

100. GROSS AMOUNT DUE FROM BORROWER:	
101. Contract sales price	
102. Personal property	
103. Settlement charges to borrower (line 14.00)	
104.	
105.	
Adjustments for items paid by seller in advance	
106. City/town taxes to	
107. County taxes to	
108. Assessments to	
109.	
110.	
111.	
112.	
120. GROSS AMOUNT DUE FROM BORROWER	

K. SUMMARY OF SELLER'S TRANSACTION

400. GROSS AMOUNT DUE TO SELLER:	
401. Contract sales price	
402. Personal property	
403.	
404.	
405.	
Adjustments for items paid by seller in advance	
406. City/town taxes to	
407. County taxes to	
408. Assessments to	
409.	
410.	
411.	
412.	
420. GROSS AMOUNT DUE TO SELLER	

200. AMOUNTS PAID BY OR IN BEHALF OF BORROWER:

201. Deposit of earnest money	
202. Principal amount of new loan(s)	
203. Existing loan(s) taken subject to	
204.	
205.	
206.	
207.	
208.	
209.	
Adjustment for items unpaid by seller	
210. City/town taxes to	
211. County taxes to	
212. Assessments to	
213.	
214.	
215.	
216.	
217.	
218.	
219.	
220. TOTAL PAID BY/FOR BORROWER	

500. REDUCTIONS IN AMOUNT DUE TO SELLER:

501. Excess deposit (see instructions)	
502. Settlement charges to seller (line 4.00)	
503. Existing loan(s) taken subject to	
504. Payoff of first mortgage loan	
505. Payoff of second mortgage loan	
506.	
507.	
508.	
509.	
Adjustments for items unpaid by seller	
510. City/town taxes to	
511. County taxes to	
512. Assessments to	
513.	
514.	
515.	
516.	
517.	
518.	
519.	
520. TOTAL REDUCTION IN AMOUNT DUE SELLER	

300. CASH AT SETTLEMENT FROM TO BORROWER

301. Gross amount due from borrow (line 120)	
302. Less amounts paid by/bor to borrow (line 220)	
303. CASH (FROM) (TO) BORROWER	

600. CASH AT SETTLEMENT TO FROM SELLER

601. Gross amount due to seller (line 420)	
602. Less reductions in amount due to seller (line 520)	
603. CASH (TO) (FROM) SELLER	

L. SETTLEMENT CHARGES

New Account Form

Fill out all required information and click "Next..." to create your account

First Name: _____ *

Last Name: _____ *

Company: _____ *

Street: _____ *

Street 2: _____ *

City: _____ *

State or Province: _____ *

Postal Code: _____ *

Country: United States _____ *

Email Address: _____ *

Phone: _____

Fax: _____

Username: _____ *

Password: _____ *

Confirm Password: _____ *

* indicates a required field

[Next...](#)

ARCHIBUS/FM

File Edit Options Tools Window Help

1 of 10 100% Total: 10 100% 10 of 10

Property Abstract Report
Page 1 of 10
10/27/2006

Description	
Property Name:	Harrison Corporate Park
Property Code:	1 HARRISON PARK
Description:	TAX PARCEL
Mailing Address:	
Street:	1802 Market Street
City:	PHILADELPHIA
State:	PA
Zip Code:	19103
Location:	
County:	PHILADELPHIA
Region:	EASTERN
Country:	USA
Site:	MARKET
Property Use:	COMMERCIAL
Status:	OWNED
Zoning:	COMMERCIAL
Percent Owned:	100.00
Property Occupancy:	2,000
Employee Headcount:	2,000
Primary Contact:	MS. JANE SWEENEY
Secondary Contact:	
# of Parking Spaces:	1,000
# of Buildings:	6
Services Used:	GAS, ELECTRIC, SEWER, WATER
Comments:	

Financial Information

Annual Net Income:		Value:	
Income:	\$10,000.00	Purchase Price:	\$7,000,000.00
Expenses:		Purchase Date:	10/1/2001
Utilities:	-\$850.36	Book Value:	\$9,000,000.00
Operating:	-\$33,440.00	Book Value Date:	11/2005
Taxes:	\$0.00		
Other:	-\$67,506.30		
Total Expenses:	-\$101,799.74	Market Value:	\$7,000,000.00

For Help, press F1 | No Restriction | Headquarters | Fixed Format report.op

The quality of the data depends on how you ask for it

Health Form # 1 2008

College of Pharmacy
University of Hawai'i at Hilo
TB & IMMUNIZATION CLEARANCE FORM

RETURN THIS FORM TO: UHH College of Pharmacy, c/o PB14 Room 7 by **July 1, 2008**
Name: Jacob Blair Please contact UHH COP Student Affairs office for question

Tuberculosis (TB) Clearance Requires 2-Step Mantoux Skin Test or Chest X-Ray	By Whom	Date Given	Date Read	Test Results
2-Step Mantoux Skin Test (PPD): A 2-Step requires that you get 2 PPD Skin test within 7 days of each other starting from the day the 1 st PPD is given. Reading is at 48 or 72 hours after the second placement. If both PPD test results are negative , you are cleared for TB. If you test positive at any time , you need to get a Chest X-Ray.		1 st PPD	5/06/08	0 mm
		2 nd PPD	5/15/08	5/17/08
Chest X-Ray (CXR): You must complete the following 3 steps: 1. Provide the date and size of a Positive PPD reading or documentation in English that confirms immunization for TB. 2. Provide the date of your most recent clear CXR (if your last CXR was taken before _____, you need another CXR). 3. Fill out and submit the enclosed TB Monitoring form.		+ PPD	Date:	mm
		CXR	Date:	

*Foreign students who have received BCG vaccine must supply date of administration. If date cannot be supplied, take PPD skin test. If positive have CXR done, if no reaction, have second PPD placed and read at 48 or 72 hours.

Vaccination Required for Clearance	By Whom	Vaccination Date
Tetanus/Diphtheria (Tdap) If you got your last Td booster before _____, you need to get another Tdap booster. If you have never received a tetanus shot, please get a two series shot with documentation	4/28/04	Kaiser Hilo 6/10/04

Vaccination or Positive Titer Required for Clearance	By Whom	Vaccination Dates	Titer Date (Collected)	Titer Results
Hepatitis-B (HepB) You need 3 doses of a HepB vaccine or a Positive titer. If your immunization did not follow the recommended schedule, you will need a titer. If you received vaccine prior to 1997, then do not take a titer. If vaccine received after 1998, you need a titer.		1 st Dose	8/2/95	<input type="checkbox"/> Positive <input type="checkbox"/> Equivocal <input type="checkbox"/> Negative
		2 nd Dose 1 month after 1st	8/30/95	
		3 rd Dose 5 months or after 2nd	1/22/96	

Positive Titer Required for Clearance – NO EXCEPTION	By Whom	Titer Date (Collected)	Titer Results
MMR Rubeola (Measles) You need a Positive titer. If your titer is NOT Positive, then you must redo the entire MMR series (2 doses) and re-titer 1 month after the 2 nd shot.	Kaiser Permanente	5/15/08	<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Equivocal <input type="checkbox"/> Negative
Rubella (German Measles) You need a Positive titer. If your titer is NOT Positive, then you must redo the entire MMR series (2 doses) and re-titer 1 month after the 2 nd shot.	Kaiser Permanente	5/15/08	<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Equivocal <input type="checkbox"/> Negative
Varicella (Chicken Pox) You need a Positive titer. If your titer is NOT Positive, then you must redo the entire VZV series (2 doses) and re-titer 1 month after the 2 nd shot.	UHH 4/20/09		<input type="checkbox"/> Positive <input type="checkbox"/> Equivocal <input type="checkbox"/> Negative
Mumps You need a Positive titer. If your titer is NOT Positive, then you must redo the entire VZV series (2 doses) and re-titer 1 month after the 2 nd shot.	Kaiser Permanente	5/15/08	<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Equivocal <input type="checkbox"/> Negative

Do not test PPD and MMR together. Perform TB tests first, then MMR 30 days after TB testing
COP 4/2008

ISO 8000 would not solve the highlighted problem!

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

OMB APPROVAL
OMB Number: 3235-0101
Expires: March 31, 2011
Estimated average burden
hours per response 2.00

FORM 144 NOTICE OF PROPOSED SALE OF SECURITIES PURSUANT TO RULE 144 UNDER THE SECURITIES ACT OF 1933

SEC USE ONLY
DOCUMENT SEQUENCE NO.

CUSIP NUMBER

WORK LOCATION

ATTENTION: Transmit for filing 3 copies of this form concurrently with either placing an order with a broker to execute sale or executing a sale directly with a market maker.

1 (a) NAME OF ISSUER (Please type or print)		(b) IRS IDENT. NO.	(c) S.E.C. FILE NO.
1 (d) ADDRESS OF ISSUER		STREET	CITY STATE ZIP CODE
2 (a) NAME OF PERSON FOR WHOSE ACCOUNT THE SECURITIES ARE TO BE SOLD		(b) RELATIONSHIP TO ISSUER	(c) ADDRESS STREET CITY STATE ZIP CODE

INSTRUCTION: The person filing this notice should contact the issuer to obtain the I.R.S. Identification Number and the S.E.C. File Number.

3 (a) Title of the Class of Securities To Be Sold	(b) Name and Address of Each Broker Through Whom the Securities are to be Offered or Each Market Maker who is Acquiring the Securities	SEC USE ONLY	(c) Number of Shares or Other Units To Be Sold <i>(See instr. 3(c))</i>	(d) Aggregate Market Value <i>(See instr. 3(d))</i>	(e) Number of Shares or Other Units Outstanding <i>(See instr. 3(e))</i>	(f) Approximate Date of Sale <i>(See instr. 3(f))</i> (MO. DAY YR.)	(g) Name of Each Securities Exchange <i>(See instr. 3(g))</i>
		Broker-Dealer File Number					

INSTRUCTIONS:

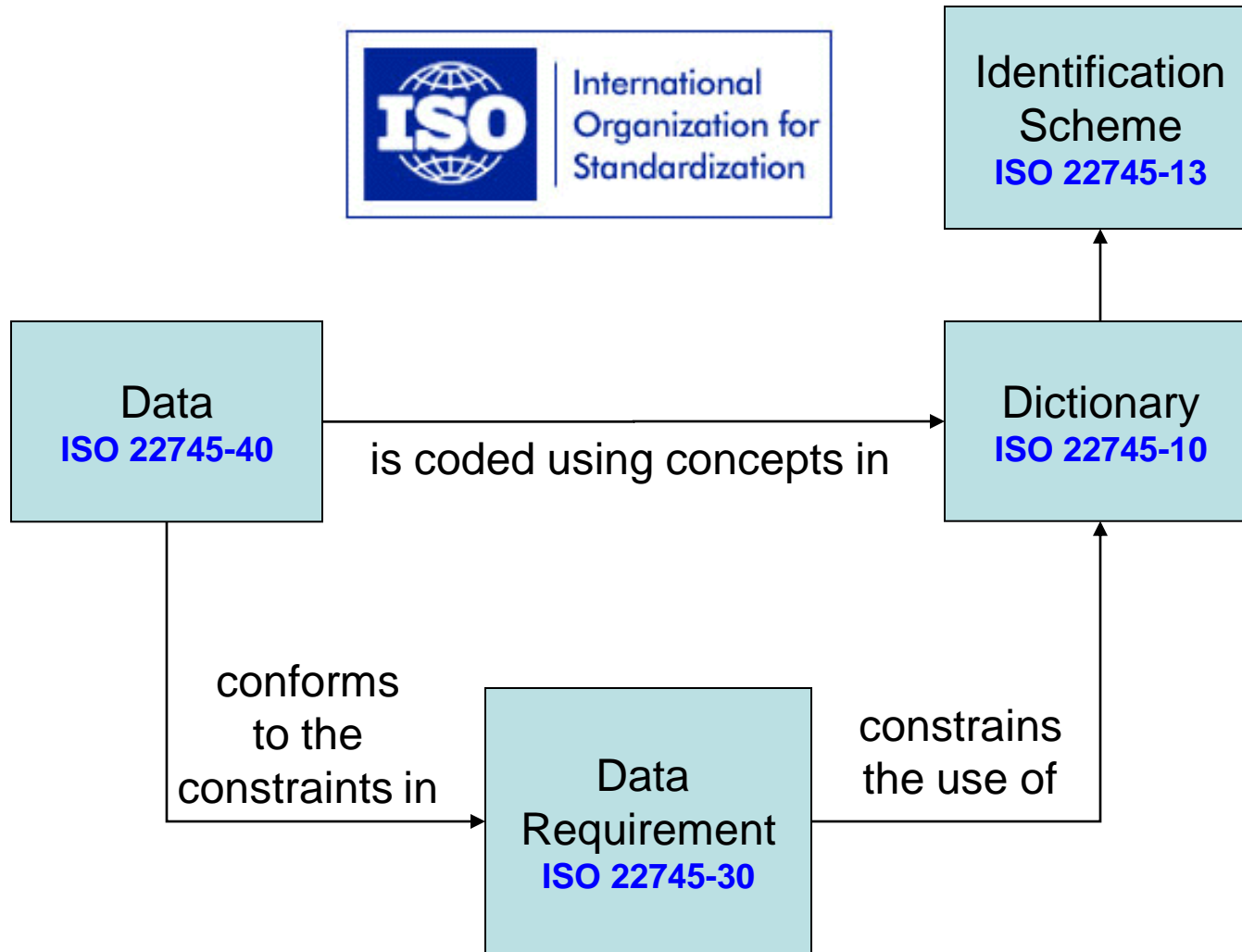
- (a) Name of issuer
(b) Issuer's I.R.S. Identification Number
(c) Issuer's S.E.C. file number, if any
(d) Issuer's address, including zip code
(e) Issuer's telephone number, including area code

- (a) Name of person for whose account the securities are to be sold
(b) Such person's relationship to the issuer (e.g., officer, director, 10% stockholder, or member of immediate family of any of the foregoing)
(c) Such person's address, including zip code

- (a) Title of the class of securities to be sold
(b) Name and address of each broker through whom the securities are intended to be sold
(c) Number of shares or other units to be sold (if debt securities, give the aggregate face amount)
(d) Aggregate market value of the securities to be sold as of a specified date within 10 days prior to the filing of this notice
(e) Number of shares or other units of the class outstanding, or if debt securities the face amount thereof outstanding, as shown by the most recent report or statement published by the issuer
(f) Approximate date on which the securities are to be sold
(g) Name of each securities exchange, if any, on which the securities are intended to be sold

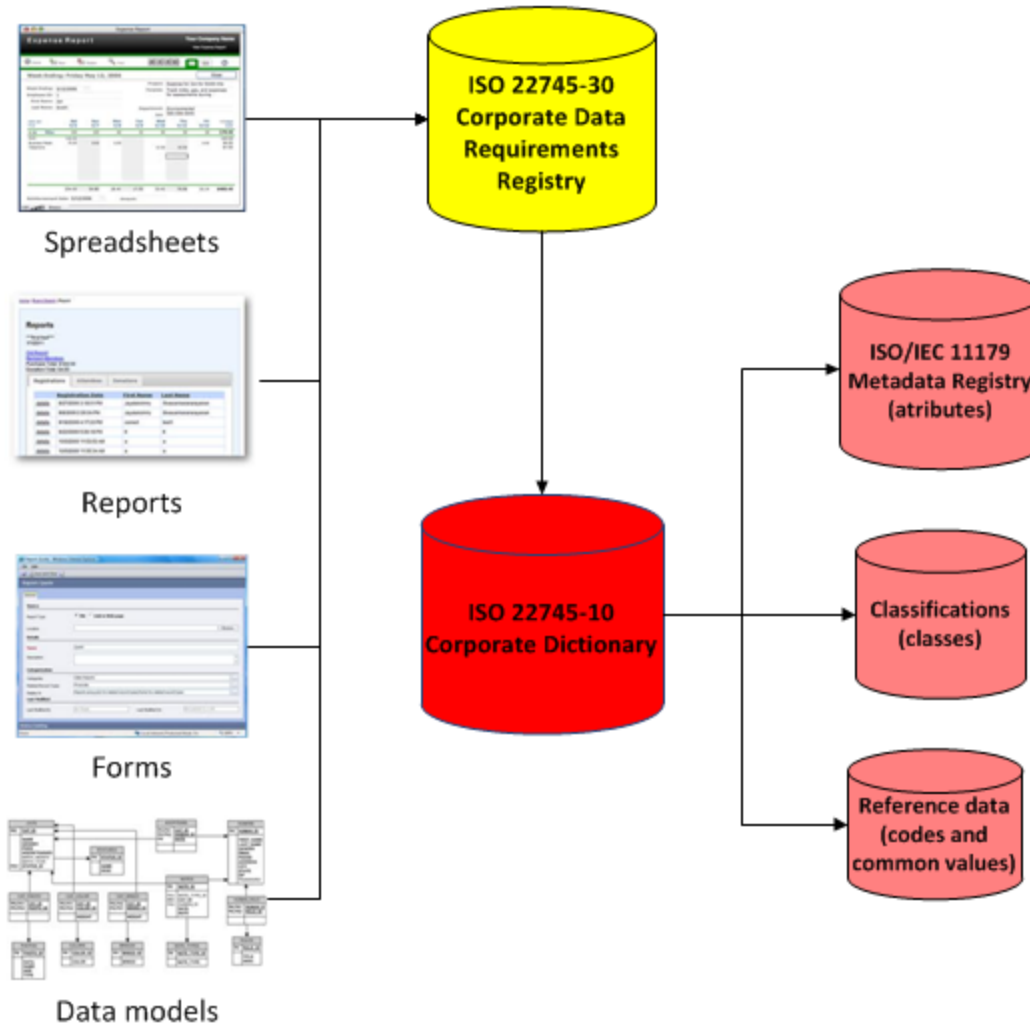
Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

ISO 22745 Architecture



Corporate Dictionary

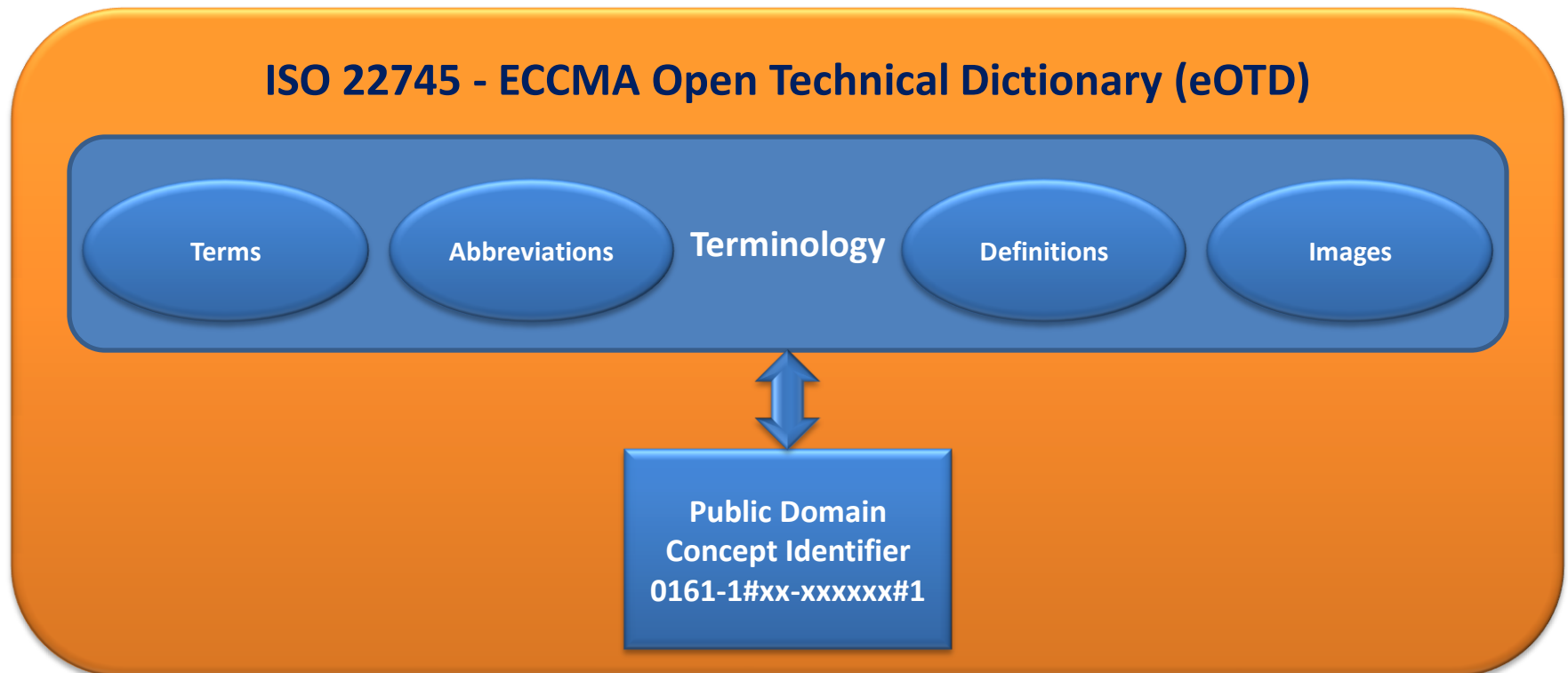
Some common examples of data requirements



Terminology Referenced in a Standard Model

The eOTD (ECCMA Open Technical Dictionary) is an ISO 22745-20 compliant central registry of terminology. Each concept and terminological component in the eOTD is assigned a **unique and permanent public domain identifier**.

Users create their corporate dictionaries as subsets of the eOTD and use the eOTD concept identifiers to manage **concept equivalence mapping**.



The property-value pair

Everything (Individuals, organizations, locations, goods, services, processes, rules, transactions) can be described using property-value pairs.

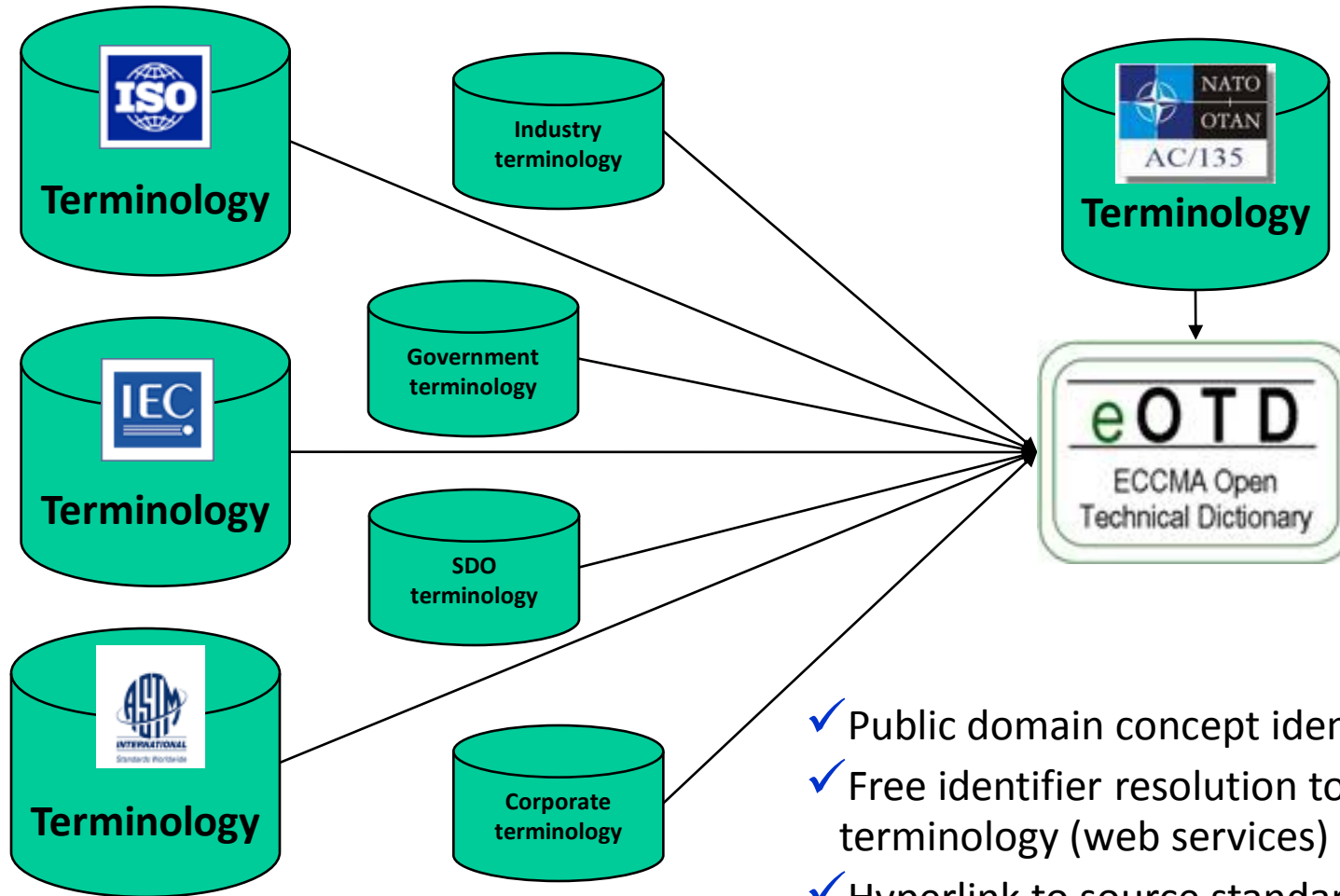
Property	Value
CLASS NAME	BOLT
PRODUCT NUMBER	3225020037
NOMINAL THREAD DIAMETER	1.0 INCH
WIDTH ACROSS FLATS	1.450 INCHES
WIDTH ACROSS CORNERS	1.653 INCHES
HEAD HEIGHT	0.591 INCHES
COUNT PER PACK	10
PACK PRICE	0.80 DOLLARS

Property	Value
FIRST NAME	JOE
LAST NAME	SMITH
TITLE	MANAGER
EMAIL	JOE.SMITH@COMANY.COM

Property	Value
DATE	2012-08-12
CREDIT CARD NUMBER	3225020037
MERCHANT NUMBER	15689345
AMOUNT	156.45 DOLLARS

Property	Value
STATE	PA
TITLE	33
CHAPTER	75
PARAGRAPH	3362
NAME	Maximum speed limits

Terminology Referenced in a Standard Model



- ✓ Public domain concept identifiers
- ✓ Free identifier resolution to underlying terminology (web services)
- ✓ Hyperlink to source standards
- ✓ Multilingual
- ✓ Multiple terms, definitions and images linked to single concept identifier

Applying Concept Equivalence to Enrich a Dictionary

SABIC

concept equivalence table

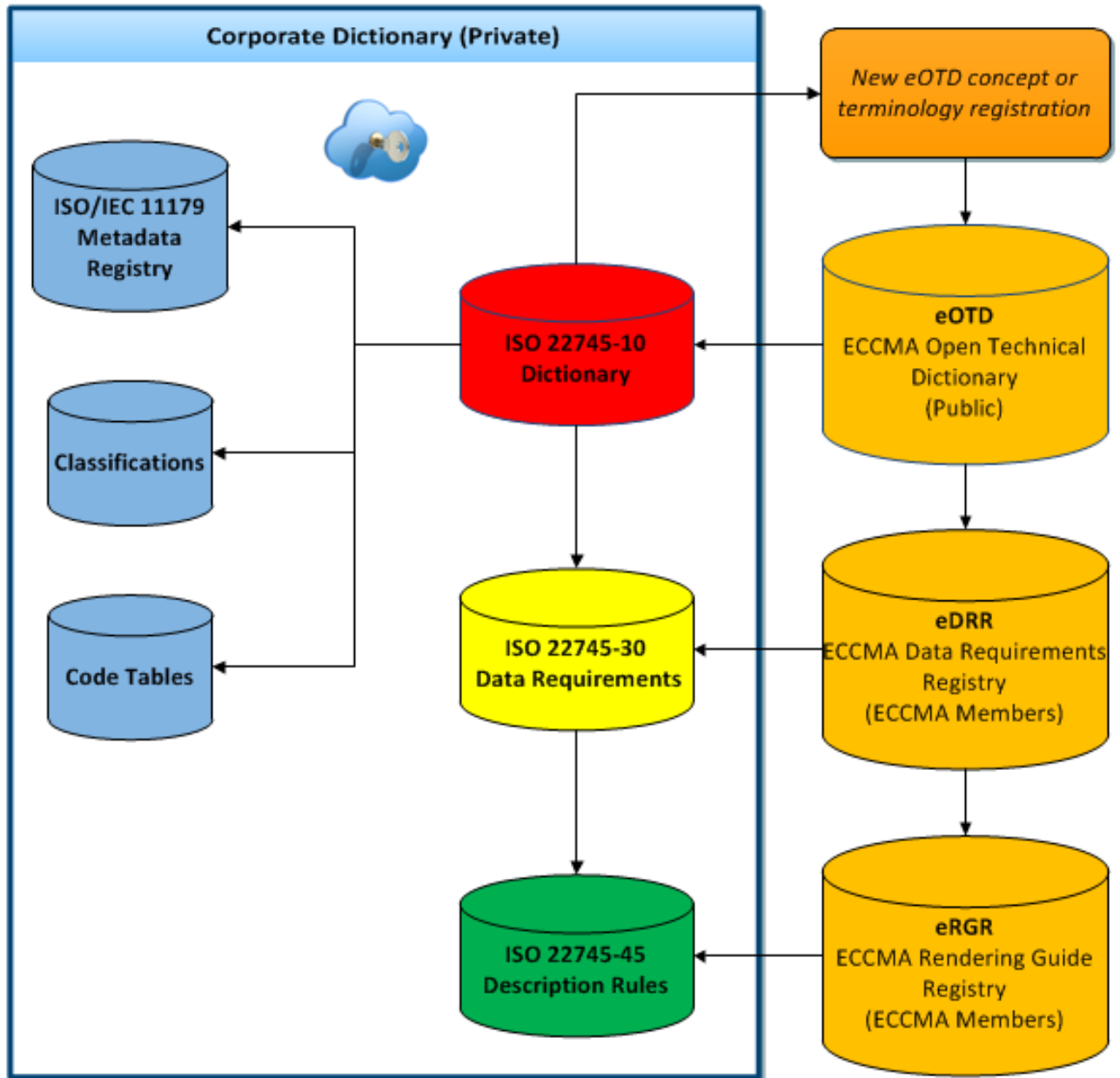
01-1073082	=	01-086142
01-1073082	=	01-068756

Sabic Bolt = Rockwell Bolt

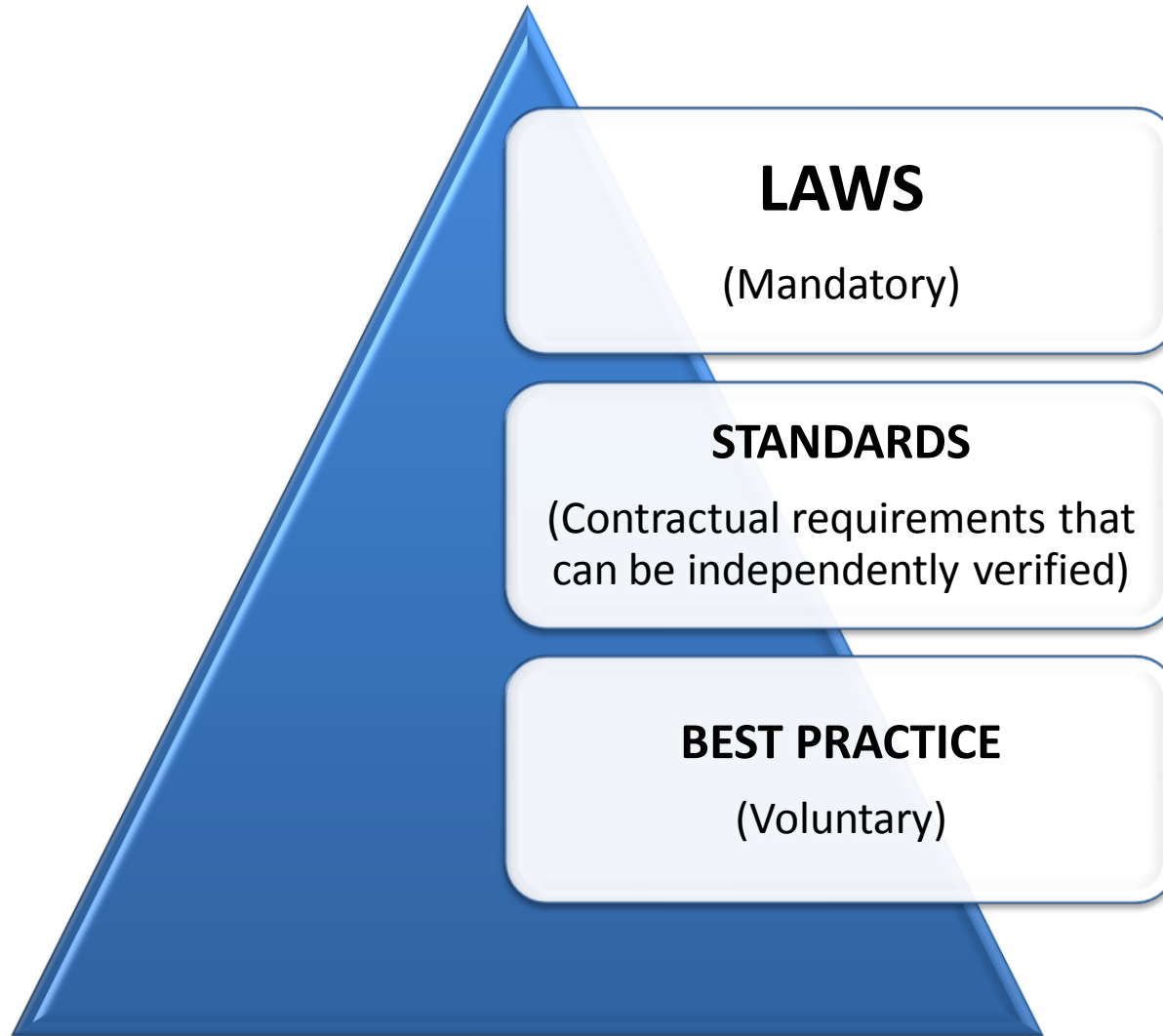
Sabic Bolt = ASTM bolt

eOTD Concept ID	Term	Ex ref	Originating Organization	Definition	Status
0161-1#01-1073082#1	BOLT	IR237	SABIC	A fastener that is externally threaded on one end and generally with some style of head on the other end and is normally intended to be tightened or released by torquing a nut and designed to fasten objects together.	Active
Equivalent concepts					
0161-1#01-086142#1	BOLT	-	Rockwell Automation, Inc	A fastener consisting of a threaded pin or rod with a head at one end and designed to be inserted through holes in assembled parts and secured by a mated nut that is tightened by applying torque. Крепежная принадлежность, представляющая собой стержень с нарезанной резьбой и головкой на одной стороне, предназначенный для помещения в отверстия собираемых вместе деталей с последующей их фиксацией с помощью гайки, затягиваемой до определенного крутящего момента.	Active
0161-1#01-068756#1	bolt	F 1789 - F16	ASTM	headed and externally threaded fastener designed to be assembled with a nut	Active

ECCMA Corporate Dictionary Manager (eCDM)



Business Constraints



Standards

Standards are published documents that establish specifications and procedures.

Standards describe protocols that improve compatibility and interoperability.

Standards are designed to be referenced in contracts.

As standards are globally adopted, they reduce cost and improve international trade.

ISO 8000 referenced in a NATO contract

ASD Specification 2000M (S2000M) is a standard that specifies the information exchange requirements for most materiel management functions commonly performed in supporting international projects. S2000M is based on a business model agreed between military customers and industry suppliers.

As of Mar 2011 ASD 2000M Chapter 1B section 3.1 includes the following statement, :

The Contractor shall supply identification and characteristic data in accordance with ISO 8000-110:2009 on any of the selected items covered in his contract. Following an initial codification request as specified in section 3.2, the NATO Codification Bureau (NCB) shall present a list of the required properties in accordance with the US Federal Item Identification Guides.

ISO 8000 referenced in a commercial contract

The contractor, sub-contractor or supplier shall, as and when requested to do so, supply technical data in electronic format on any of the items covered in this contract as follows:

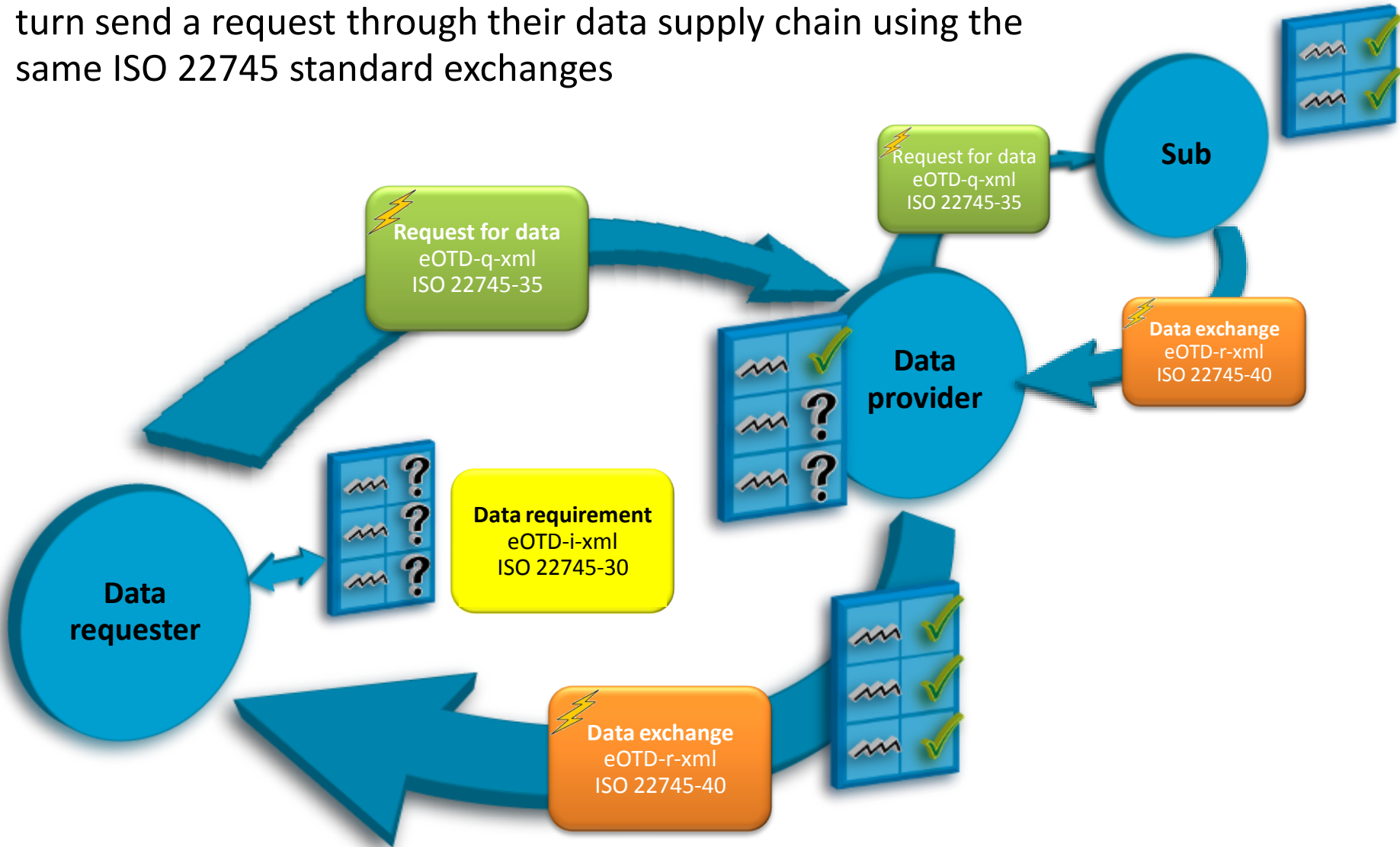
The data shall be ISO 8000-110:2009 compliant.

- *The data shall comply with registered ISO 22745-30 compliant data requirements*
- *The data shall be encoded using concept identifiers from an ISO 22745 compliant open technical dictionary that supports free resolution to concept definitions.*
- *The data shall be provided in ISO 22745-40 compliant Extensible Markup Language (xml).*

- Providing the data necessary for the “safe and efficient” operation of plant and equipment is an established legal requirement in most countries.
- Creating ISO 8000-110:2009 compliant data does not require the payment of any license fees or the use of specialized software, it is within the technical ability of all suppliers regardless of their size.

Automating the data supply chain using ISO 22745

A data provider may not have all the data requested so they in turn send a request through their data supply chain using the same ISO 22745 standard exchanges



Use standards to contract for quality data

1. ISO 8000 quality data is portable data
2. ISO 8000-120 quality data is data with provenance
3. ISO 22745 is the international standard for the exchange of quality data

Entrust your master data supply chain to a certified ISO 8000 Master Data Quality Manager
(Look for ISO 8000 MDQM Certified)



Emerging Data Quality Drivers

1. Data Portability
2. Provenance
3. Authoritative data



Companies are discovering how to manage a data supply chain to acquire and distribute authoritative high quality data

ISO 22745 is the international standard for the exchange of quality data

Master Data

Part 120 Provenance

Provenance: “the history of the data”

- At the data element level
- When was it extracted from the database
- Who is the owner of the database

Authoritative data is data where the author of the data is identified. Legally the author has control over the data but occasionally third party validation is required for data to be considered authoritative. While an “author” may sell the copyright (the “ownership”) in the data, the author remains the authoritative source of the data.

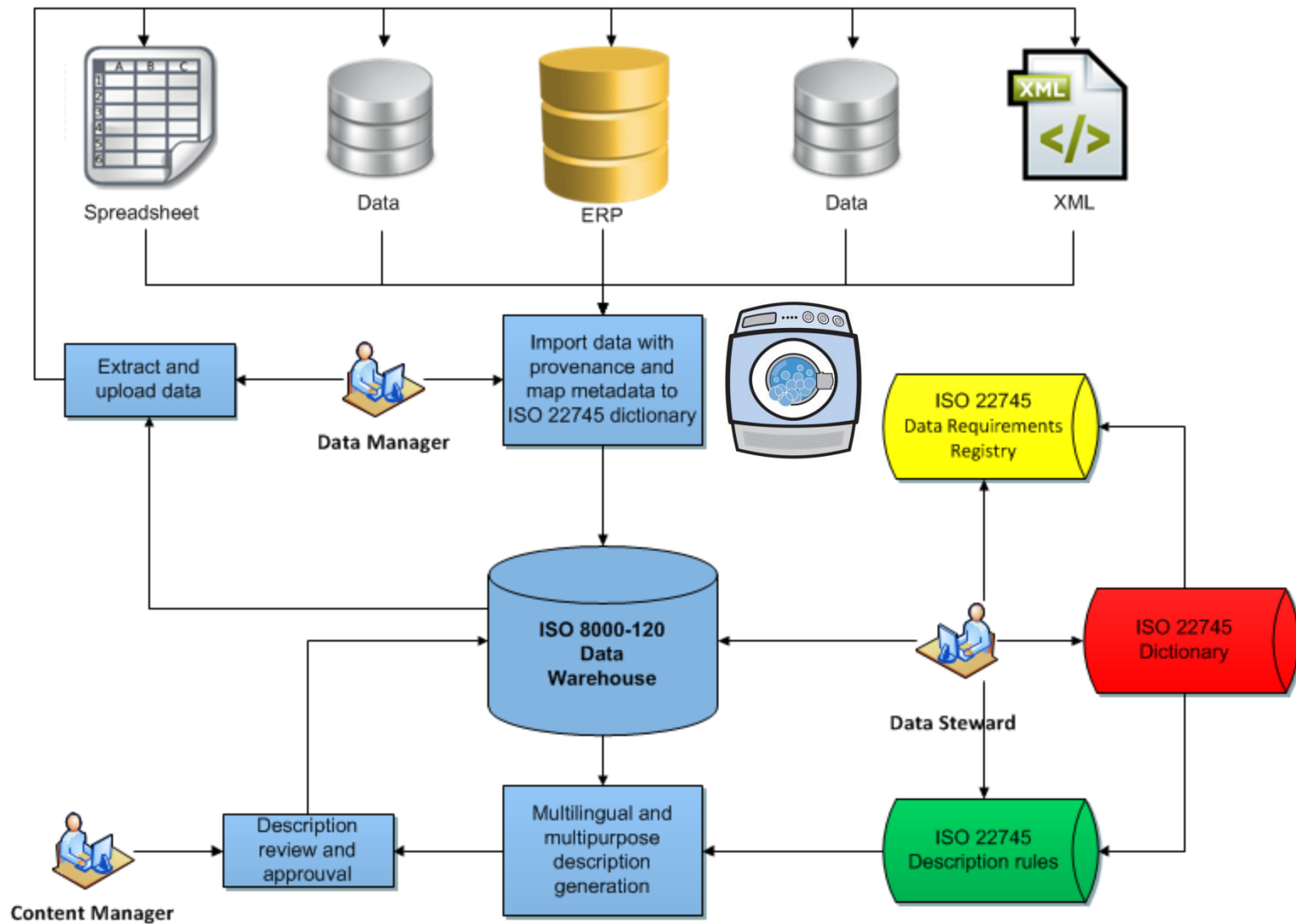
Master Data

Part 130
Accuracy

A common definition of “accuracy” is the degree to which something reflects the real world. The problem with this definition is that the comparison with the real world is rarely absolute.

- At the data element level
- Who makes the claim to accuracy (business identifier)
- If the accuracy is covered by a **warranty** what is the Universal Resource Identifier (URI) where the warranty is located.
- If the accuracy is **asserted** what is the Universal Resource Identifier (URI) where the assertion is located.

ISO 8000-120 data warehouse used to manage content



Big Data?



Questions?

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