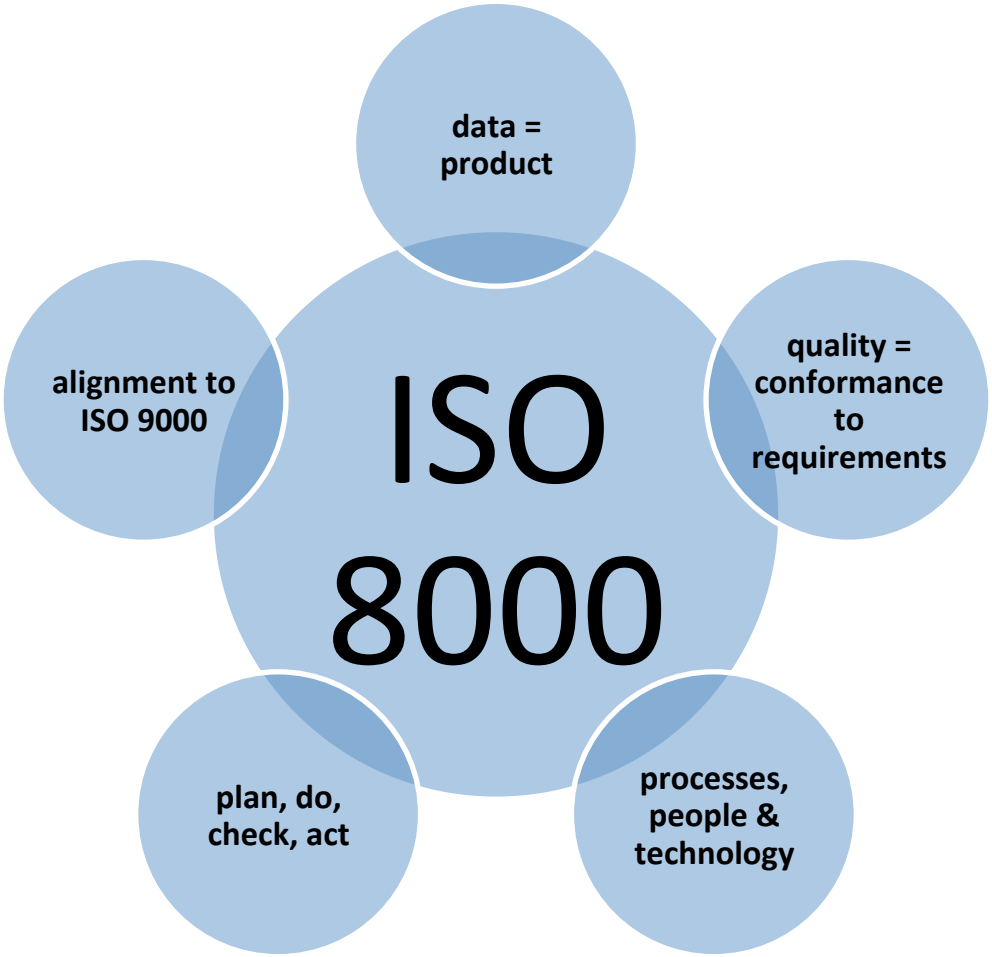
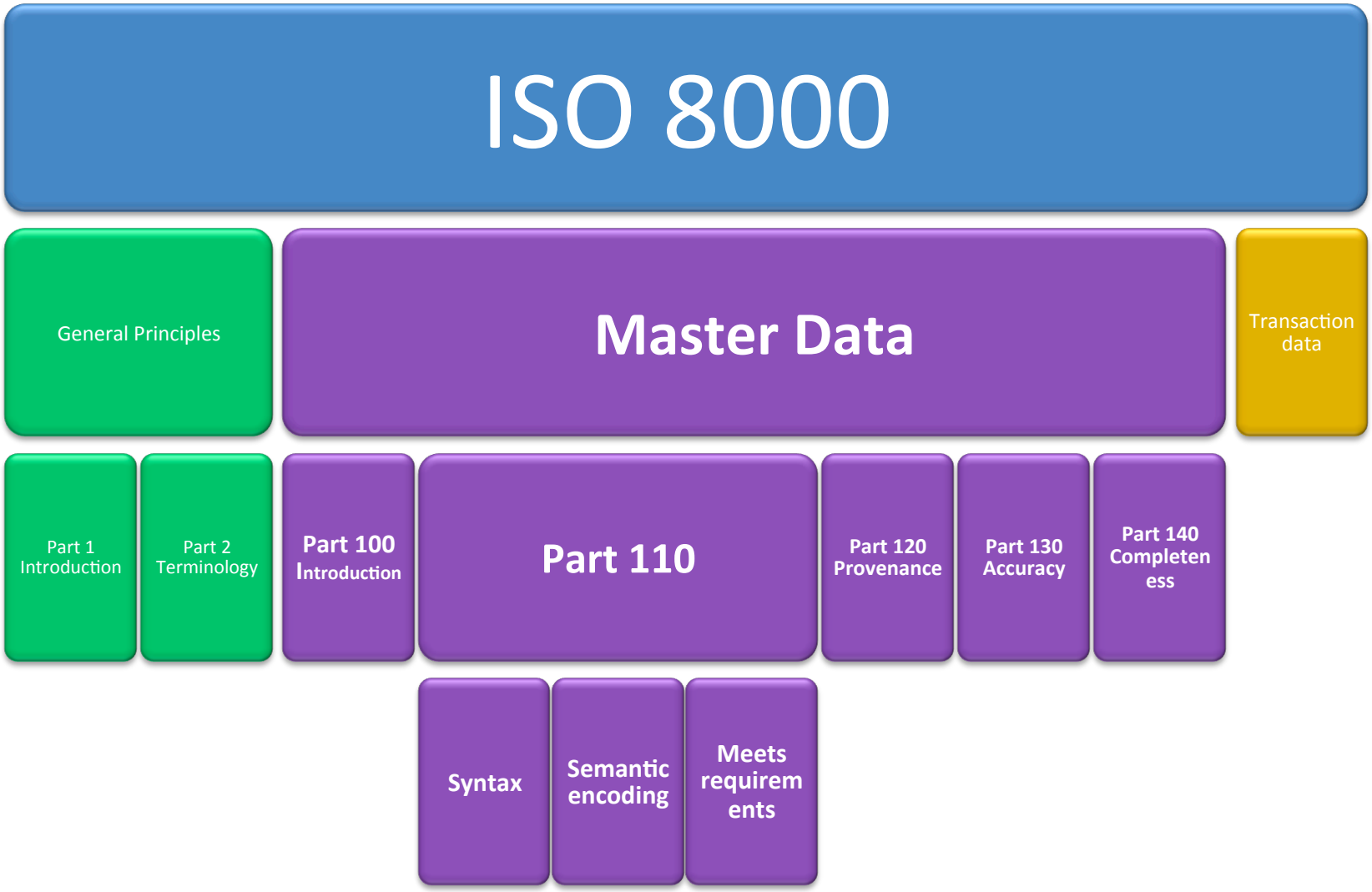
ISO 8000 MD Introduction

Dr Salomon de Jager
CEO Pilog Group


data = product
quality = conformance to requirements
processes, people & technology
plan, do, check, act
alignment to ISO 9000
ISO 8000

ISO 8000 Family of Standards



ISO 8000 Part 100

deals with the creation and management of

Master Data

that **precedes** processes and methods

used by organizations

MOTIVATION

ISO 8000

THE INTERNATIONAL STANDARD FOR DATA QUALITY

The **motivation** for ISO 8000 Part 100 was driven by **companies** looking for **quality data.**

- Improved data quality
- allows data integration
- that built long term relationships

SOLUTION

SOLUTION

ISO 8000

THE INTERNATIONAL STANDARD FOR DATA QUALITY

ISO 8000 Part 100 and Part 110 standards offers the solution :

ISO 8000 Part 100 focus on **promoting quality** Master Data by starting with **the data capture** process

ISO 8000 Part 110 focus on **Standards** to create quality Master data that can be **processed by a computer**

ISO 8000 – 22745 focus on the **exchange** of processed data

PURPOSE

Whereas : ISO 9001 states: 'You have a process and you follow the process'

ISO 8000 Part 100 and 110 provide a set of rules to follow. ISO 22745 tell us how to follow the rules…

PURPOSE

ISO 8000

Quality Certified

THE INTERNATIONAL STANDARD FOR DATA QUALITY

The **purpose** of **standards** is **to be able to claim** that your company, software and services are ISO 8000 compliant, **which means**:

You are providing data in **compliance** with a **Data Requirement** ★

You have **quality data** that is **interchangeable** between different software applications ★

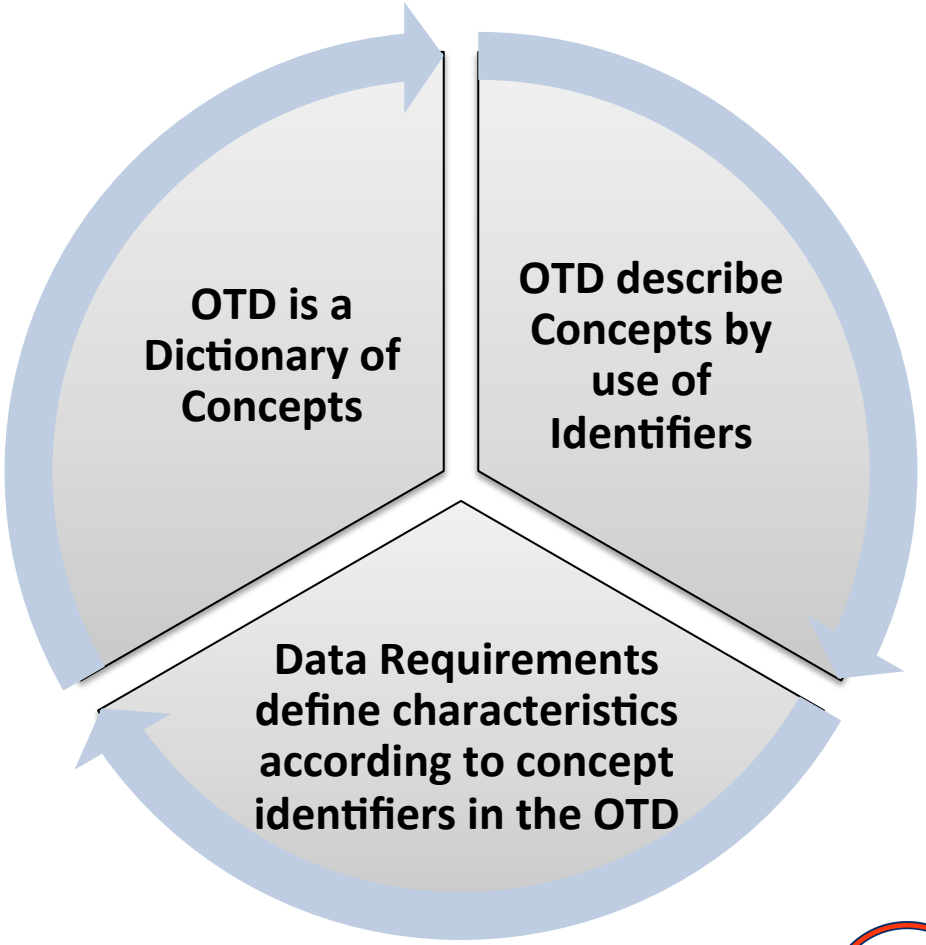
You can **formulate** your data requirements into a **Request for Data** ★

APPROACH

APPROACH

ISO 8000

To claim that your company is ISO 8000 compliant you need to understand:



ISO 8000

THE INTERNATIONAL STANDARD FOR DATA QUALITY

MOTIVATION — Companies looking for Quality Data — PLAY VIDEO

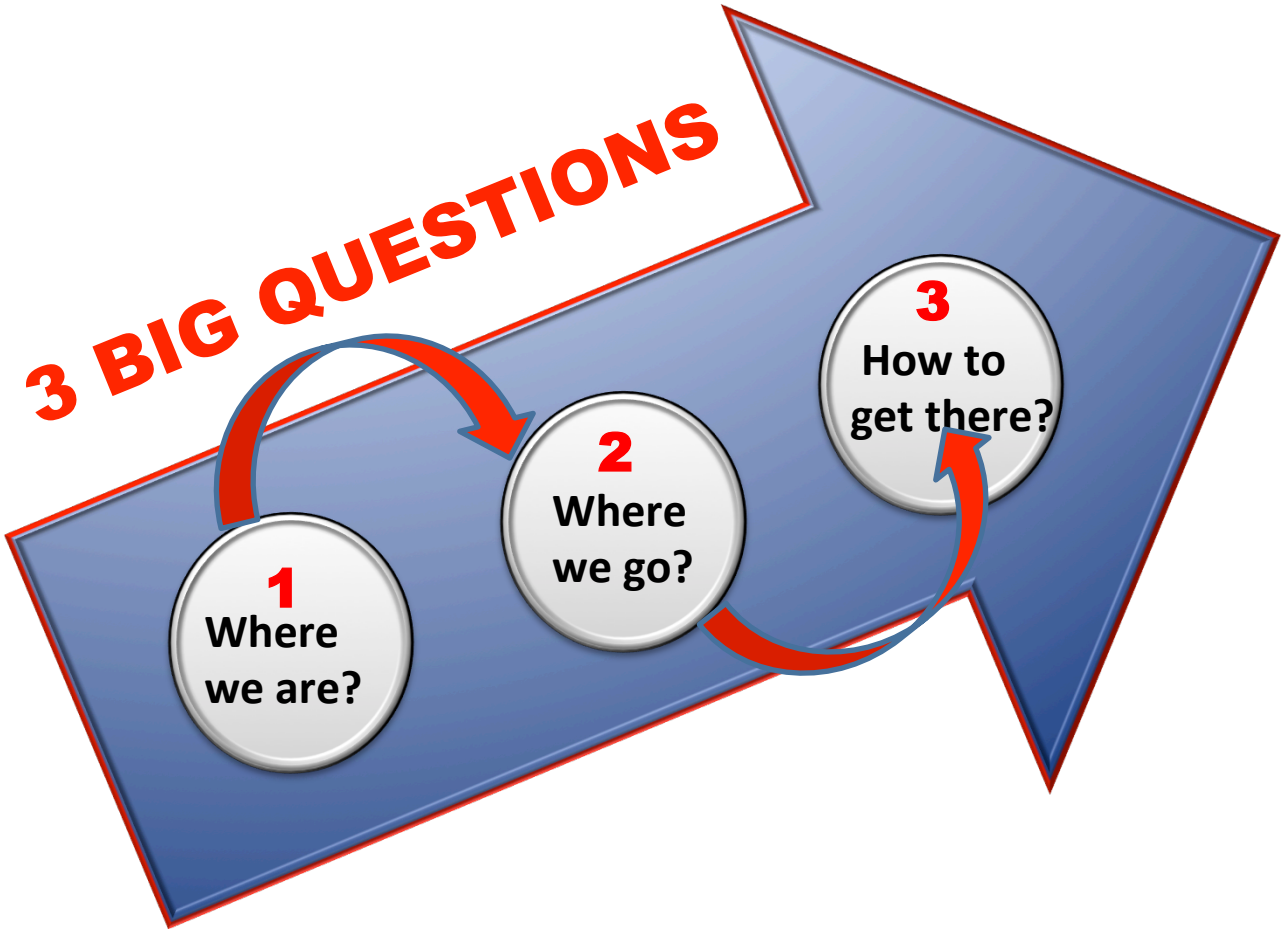
SOLUTION — ISO 8000 Part 100 and Part 110 — PLAY VIDEO

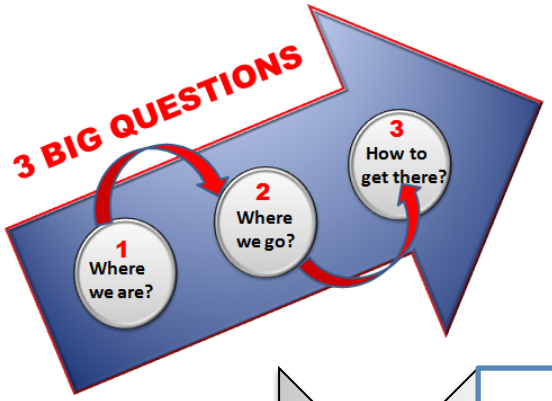
PURPOSE — To be able to claim that Company is ISO 8000 compliant — PLAY VIDEO

APPROACH — Need to understand OTD and Data Requirements — PLAY VIDEO

APPROACH

Need to understand OTD and Data Requirements





1

- Examples of how we currently use the Data Dictionary

2

- Examples of the OTD and Data Requirements as explained in ISO 8000 Part 100

3

- Working through requirements and standards documented in ISO 8000 Part 100 to Part 140

1

Where we are

Where we go

2

DATA DICTIONARY

Standardized templates are used to guide the cataloguer

OPEN TECHNICAL DICTIONARY

Concepts with Identifiers

Terminology to specify the meaning of concepts

1 Where we are

DATA DICTIONARY

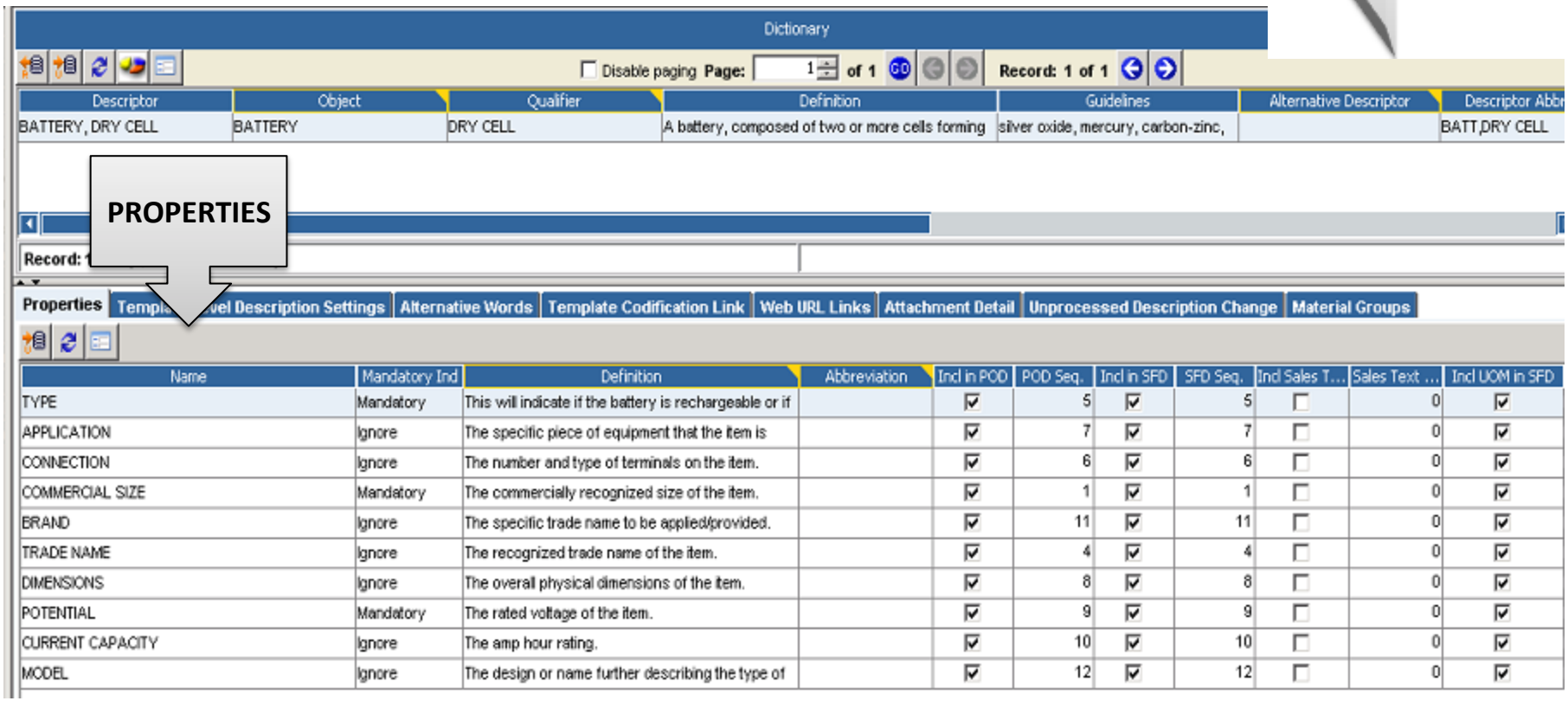
Standardized templates are used to guide the cataloguer

DESCRIPTOR

Data Dictionary Template

Where we are

BATTERY, DRY CELL



The Data Dictionary: consist out of **standardized Templates**

ISO 8000

2

OPEN TECHNICAL DICTIONARY

Concepts with Identifiers

Terminology to specify the meaning of concepts

Where we go

ISO 8000

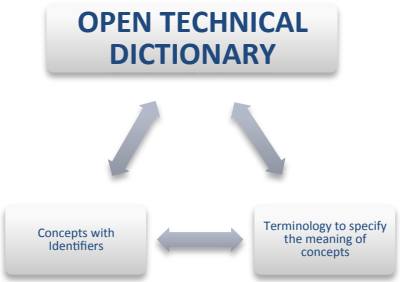
The Open Technical Dictionary: consist out of **Concepts**

OPEN TECHNICAL DICTIONARY

Concepts with Identifiers

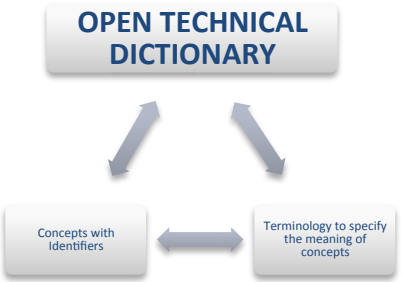
Terminology to specify the meaning of concepts

ISO 8000



Concepts: are anything you can think about

ISO 8000

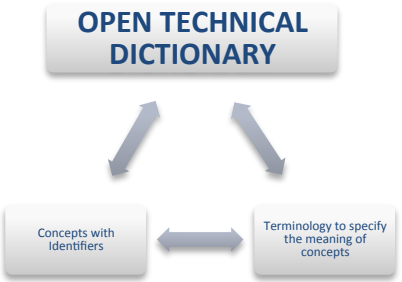


Each Concept is linked to a **Concept Type**

= **CLASS**

= **PROPERTY**

ISO 8000

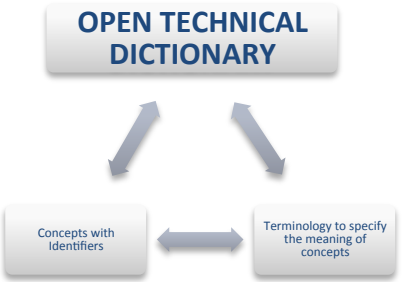


Each Concept is assigned a unique and permanent identifier

0161-1#TM-1099479#1

0188-1#tTM-1088786#1

ISO 8000



Each Concept has a **description** to specify the meaning of the concept

0161-1#TM-1099479#1

A thrust bearing having a suitably formed face or faces that resist the axial pressure of one or more collars on a rotating shaft.

ISO 8000

Example OTD

CONCEPT TYPES

CONCEPTS

DESCRIPTIONS

UNIQUE ID'S

	Concept Type	Term	Language	Definition	Abbreviation	Label	Org Name	Domain	Manuf	Active Ind	Concept IRDI
☐	Class	BATTERY, DRY CELL	English US	A battery, composed of one cells forming a single unit, which may or may not be recharged and whose electrolyte is not in fluid form.	BATT DRY CELL	-	VOLTEX	PRODUCT	-	Y	1007-1#01-086007#1
☐	Property	TYPE	English US	A subdivision into a particular classification.	TYP	-	VOLTEX	-	-	Y	1007-1#S 02-062726#1

OPEN TECHNICAL DICTIONARY

DATA REQUIREMENTS

ISO 8000

The **DATA REQUIREMENT REGISTRY** contains:

1. Relationships between concepts

2. Constraints on property values

3. Data types

Rule: All information used to create a Data Requirement must first be registered in the Open Technical Dictionary.

CLASS = BATTERY, DRY CELL

Example: DATA REQUIREMENT

Data Requirement (Template) of BATTERY, DRY CELL

CHARACTERISTICS OF CLASS

1 - 11 of 11

Property Name	Definition	Required	Sequence	Data Type	Language
TYPE	A subdivision into a particular classification.	Mandatory	1	String Type	English US
POTENTIAL	The rated voltage of the item.	Mandatory	2	String Type	English US
CURRENT CAPACITY	The amp hour rating.	Mandatory	3	String Type	English US
COMMERCIAL SIZE	The size of the item as it is commercially known.	Optional	4	String Type	English US
DIMENSIONS	The overall physical dimensions of the item.	Optional	5	String Type	English US

Example of Data Requirement to show *Class* **BATTERY, DRY CELL** and *Characteristic Data*

A Data Requirement: Is a set of rules describing items that belong to a particular class using entries from a Data Dictionary.

Example: DATA REQUIREMENT

PROPERTY **VALUES** for **'TYPE'**

PROPERTY **= TYPE**

CHARACTERICS OF **CLASS** = BATTERY, DRY CELL

1 - 3 of 3

Value	Unit Of Measure(UOM)
BUTTON	N/A
LIPO	N/A
USB RECHARGEABLE	N/A

Property Name		quired	Sequence	Data Type	Language
TYPE		ndatory	1	String Type	English US
POTENTIAL		ndatory	2	String Type	English US
CURRENT CAPACITY	The amp hour rating.	Mandatory	3	String Type	English US
COMMERCIAL SIZE	The size of the item as it is commercially known.	Optional	4	String Type	English US
DIMENSIONS	The overall physical dimensions of the item.	Optional	5	String Type	English US
CONNECTION TYPE	The specific type of connection.	Mandatory	6	String Type	English US
MATERIAL	The predominant material that the item is made from.	Mandatory	7	String Type	English US

1

Example of Data Requirement to show *Property* **Type** with it's *Property Values*

Example: DATA REQUIREMENT

PROPERTY **VALUES** for **'POTENTIAL'**

PROPERTY **= POTENTIAL**

CHARACTERICS OF **CLASS** = BATTERY, DRY CELL

1 - 6 of 6

Value	Unit Of Measure(UOM)
1.2	V
1.5	V
1.55	V
3.6	V
6	V
9	V

Data Requirement

Go | Actions

11

Property Name		Required	Sequence	Data Type	Language
TYPE	ion.	Mandatory	1	String Type	English US
POTENTIAL		Mandatory	2	String Type	English US
CURRENT CAPACITY	The amp hour rating.	Mandatory	3	String Type	English US
COMMERCIAL SIZE	The size of the item as it is commercially known.	Optional	4	String Type	English US
DIMENSIONS	The overall physical dimensions of the item.	Optional	5	String Type	English US
CONNECTION TYPE	The specific type of connection.	Mandatory	6	String Type	English US
MATERIAL	The predominant material that the item is made from.	Mandatory	7	String Type	English US

2

Example of Data Requirement to show *Property* **Potential** with it's *Property*

DATA REQUIREMENTS

ITEMS

Example: ITEM ENTRY CONTROL

For each item

descriptions are rendered

into multiple languages

Where we go

Example:

Record Details

Record ID	40482506B8A04FFBAD5C6043A417D823
Class	Lithium Battery
Record #	2711P-RY2032 A
Catalog #	2711P-RY2032
Status	APPROVED

Descriptions | **String Translations** | **Regenerate Descriptions**

Type	Description	Language	Country	Last Generated
MKT	锂电池	Chinese	CN	2013/10/08 15:44 +02:00
MKT	PanelView Plus Lithium Battery	English	US	2013/10/08 15:44 +02:00
MKT	Batterie Lithium PanelView™ Plus	French	FR	2013/10/08 15:44 +02:00
MKT	PanelView™ Plus Ersatz Lithiumbatterie	German	DE	2013/10/08 15:44 +02:00
MKT	Batteria Al Litio PanelView™ Plus	Italian	IT	2013/10/08 15:44 +02:00
MKT	Bateria De Lítio De PanelView™ Plus	Portuguese	BR	2013/10/08 15:44 +02:00
MKT	La Batería De Litio PanelView™ Plus	Spanish	MX	2013/10/08 15:44 +02:00
ORIGINAL MKT	PanelView Plus Accessory	English	US	2013/06/03 00:00 +02:00

MOTIVATION

Companies looking for Quality Data

SOLUTION

ISO 8000 Part 100 and Part 110

Let's go invent tomorrow instead of worrying about what happened yesterday.

3

We have all the technology we need…

In a way it mirrors our thought processes

We need to use technology better….

Think Different.

ISO 8000 Part 100

holds the key to

Quality Data

by focusing on the true meaning of

Data, Information, Knowledge, Intelligence, Wisdom

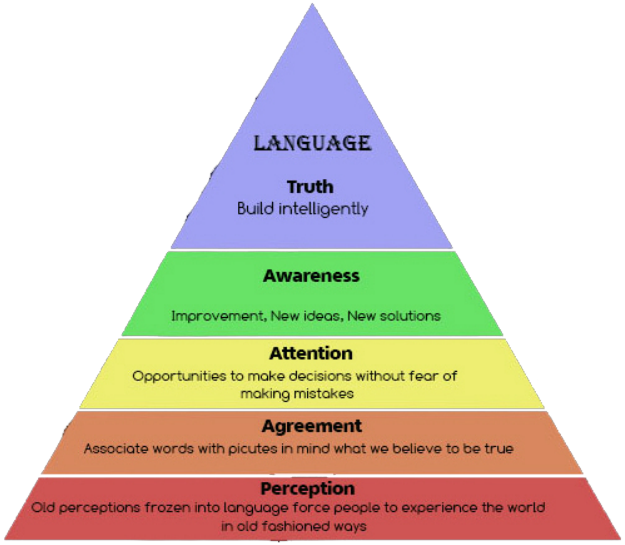
ISO 8000

Quality Data

Think Different.

Achieved by combining the following:

Data Pyramid



Language Pyramid

Maslow Human Needs

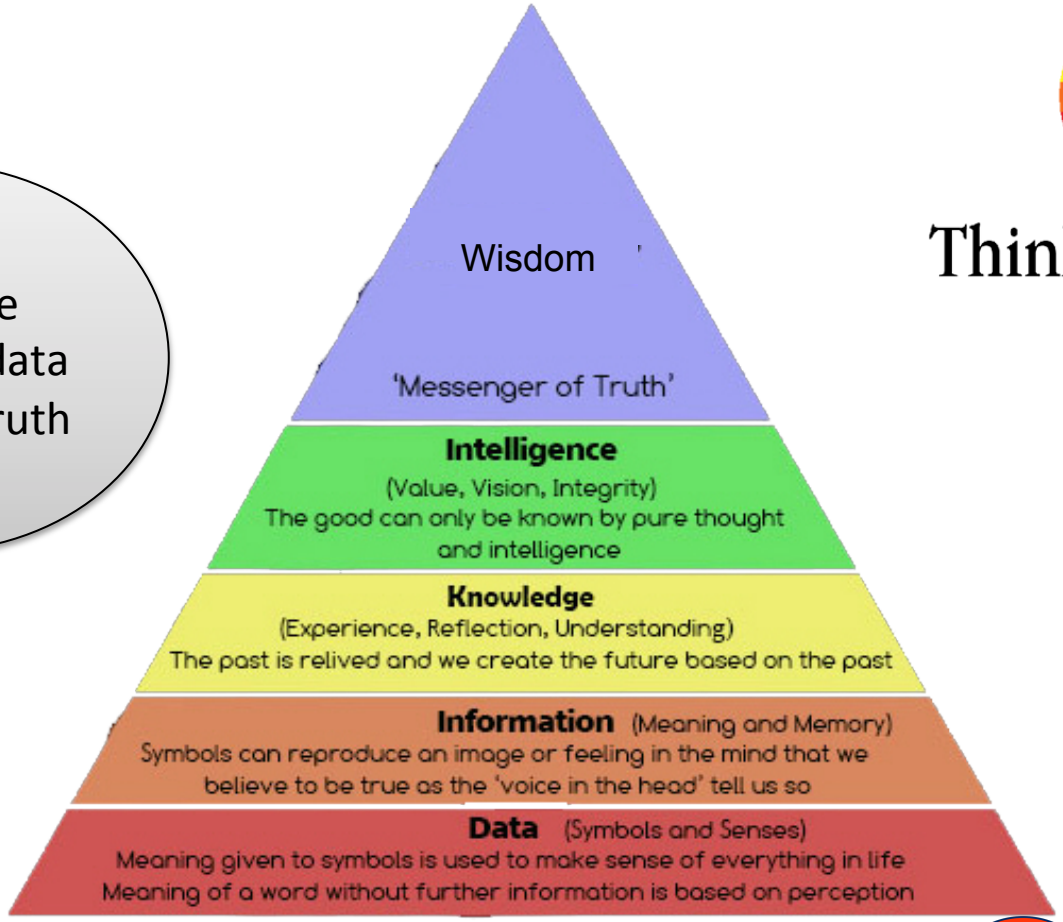
PiLog Academy

PiLog
MASTER DATA QUALITY SOLUTIONS

ISO 8000

Quality Data

Data Pyramid



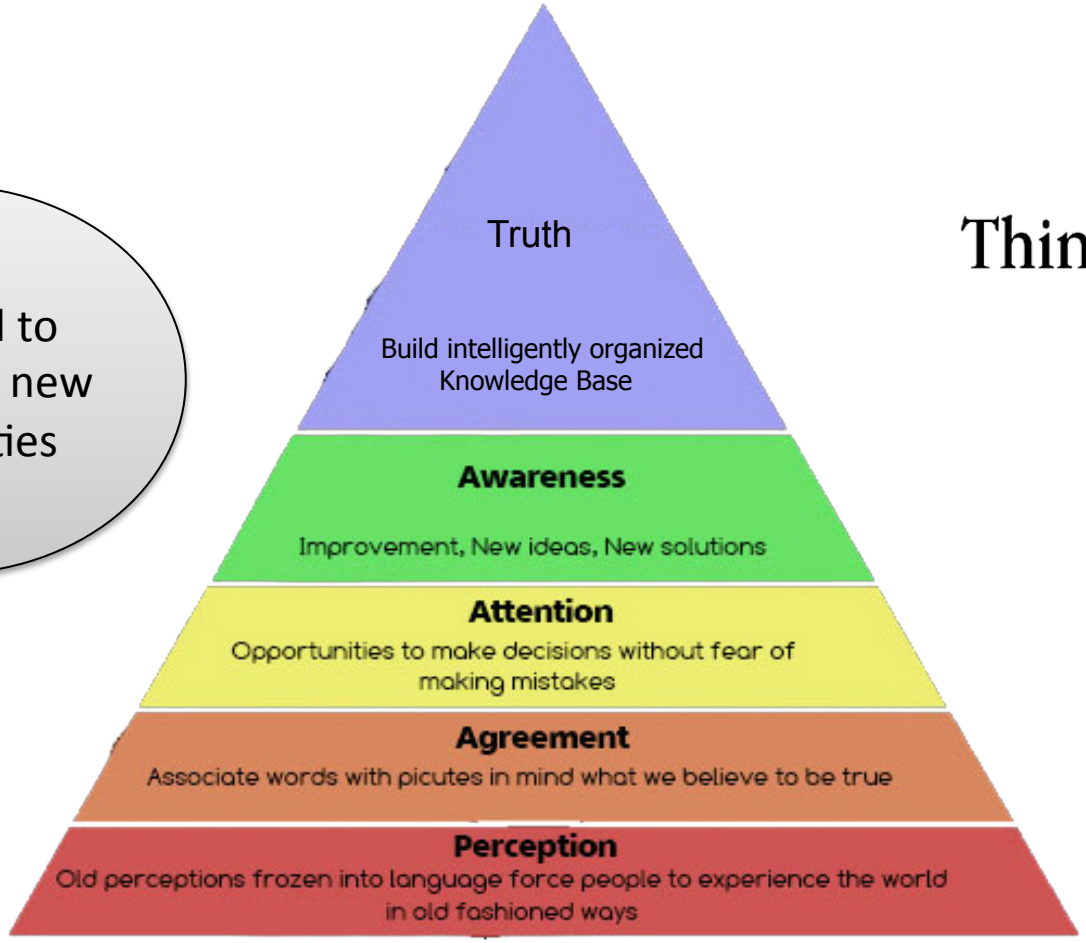
To create authentic data based on truth

Think Different.

Quality Data

ISO 8000

Language Pyramid



We need to awaken to new possibilities

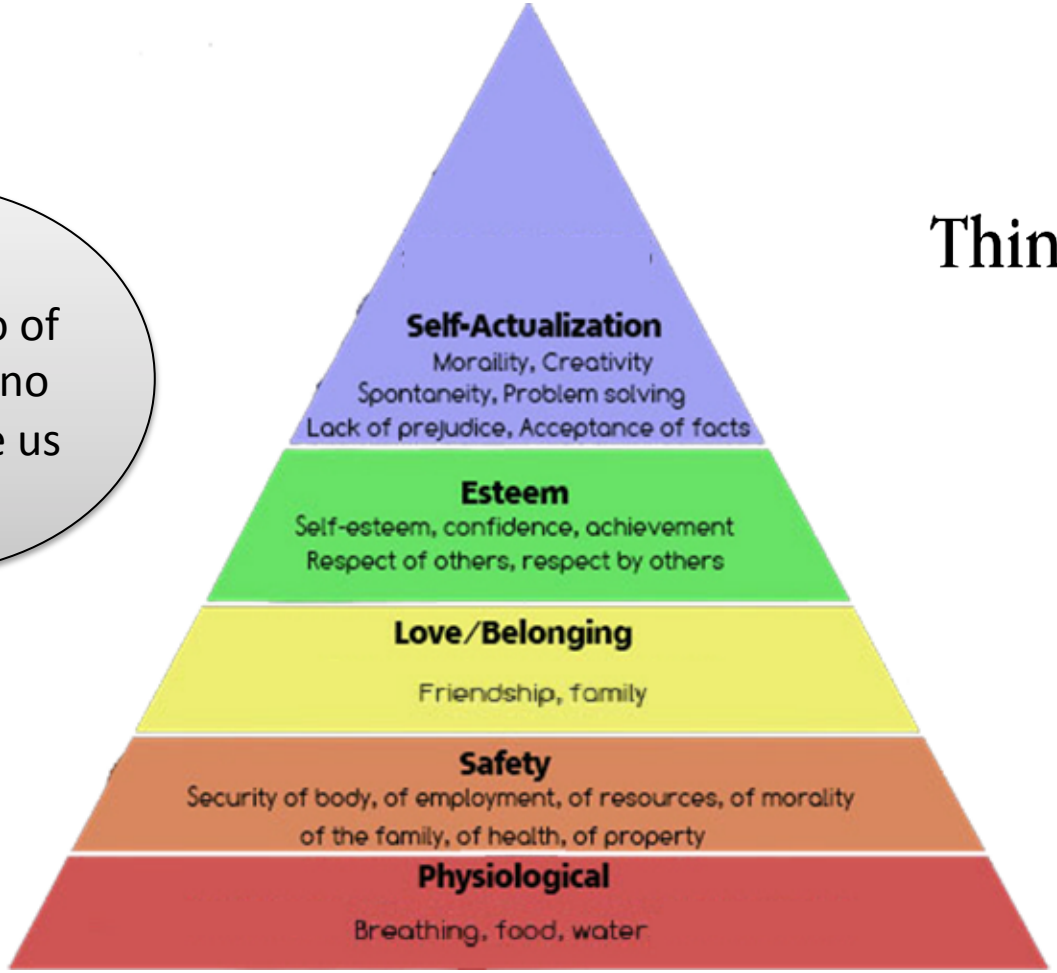
ISO 8000

Think Different.

ISO 8000

Quality Data

Maslow Human Needs



By letting go of habits that no longer serve us

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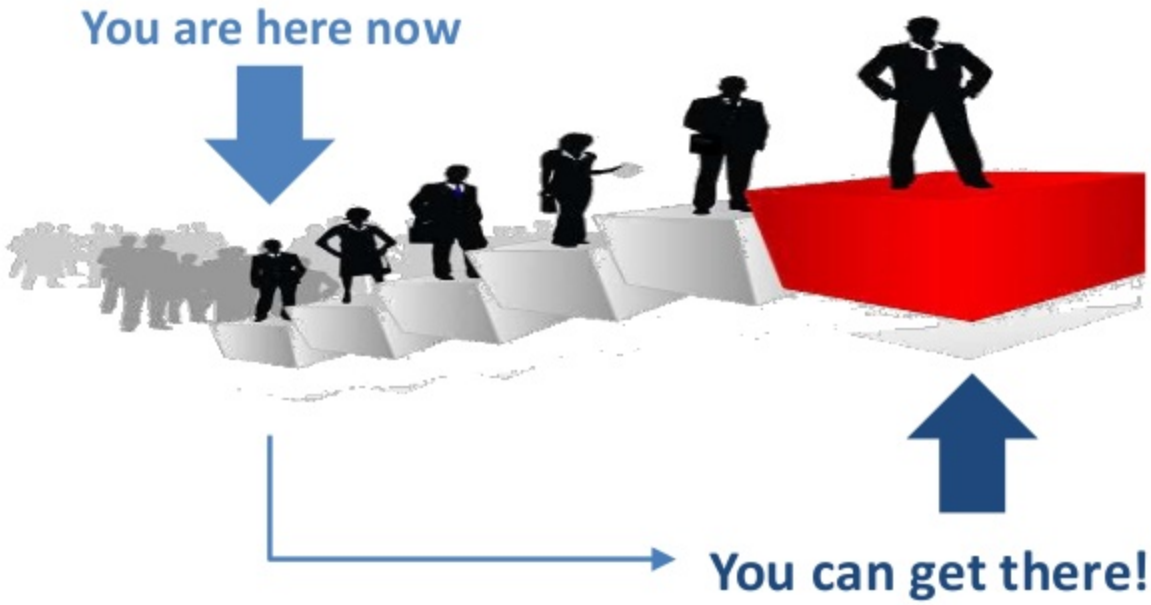
Think Different.

PiLog
MASTER DATA QUALITY SOLUTIONS



Let the journey begin.

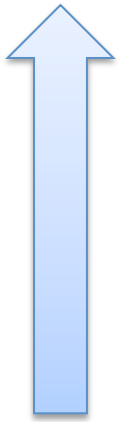
Data and Perception

In the new Oxford American Dictionary
Data is defined as:
'**facts** and statistics **collected** together
for **reference** or analysis'

Data (Symbols and Senses)
Meaning given to symbols is used to make sense of everything in life
Meaning of a word without further information is based on perception

Data and Perception

What we call **facts** can vary from person to person based on individual **Perception**



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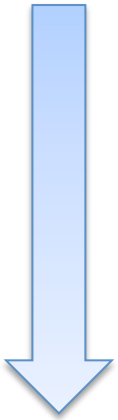

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Perception
Old perceptions frozen into language force people to experience the world in old fashioned ways

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Perception is defined as**:**
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It becomes clear that **Data** is not **Information**

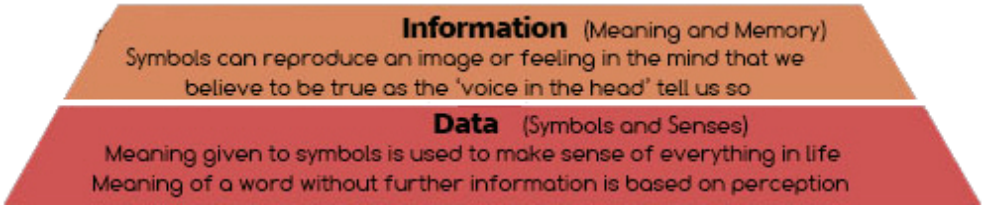
Data is based on individual **Perception** of a **word**

Data (Symbols and Senses)
Meaning given to symbols is used to make sense of everything in life
Meaning of a word without further information is based on perception

Perception
Old perceptions frozen into language force people to experience the world in old fashioned ways

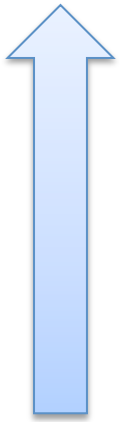
Information and Agreement

A collection of data for which there is no relation between the pieces of data is not information. **Information** relates to description, definition or perspective.



Information and Agreement

We need to reach **Agreement** in understanding the relationships among data



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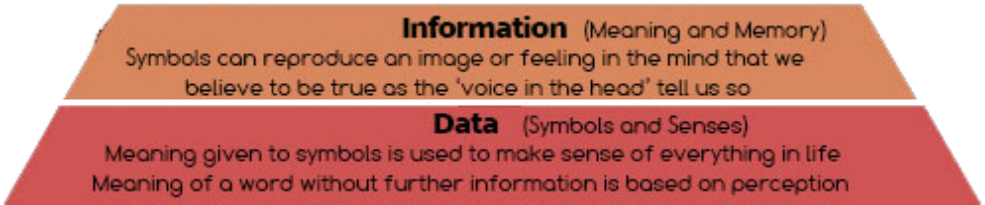

Information and Agreement

We need to reach **Agreement** in understanding the relationships among data

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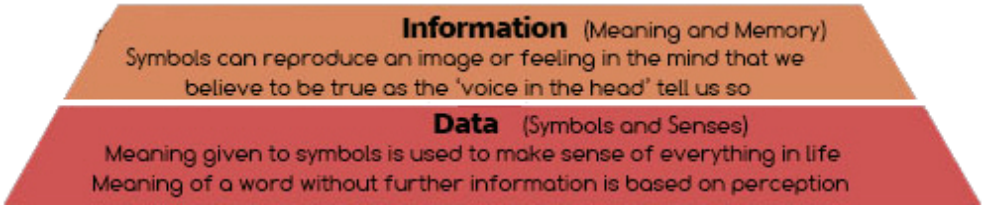
The Problem:
We associate words and pictures in the mind what we believe to be true.



Information and Agreement

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A collection of data for which there is no relation between the pieces of data is not information. **Information** relates to description, definition or perspective.

The Problem:
We associate words and pictures
In the mind what we believe to be true.

The Solution: We need to reach **Agreement** upon the **meaning** of the **word**

Information (Meaning and Memory)
Symbols can reproduce an image or feeling in the mind that we believe to be true as the 'voice in the head' tell us so

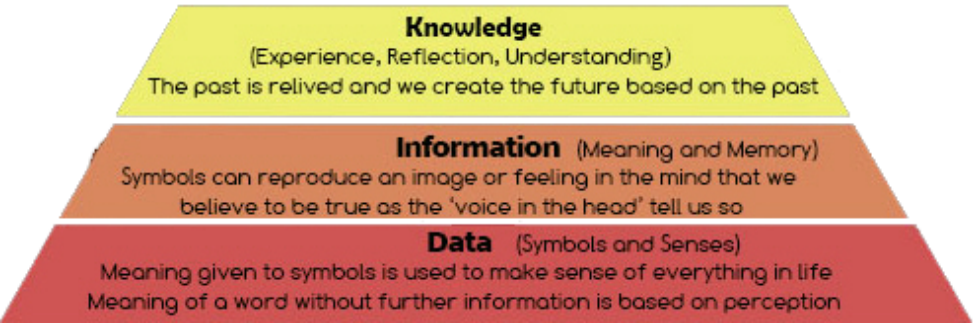
Data (Symbols and Senses)
Meaning given to symbols is used to make sense of everything in life
Meaning of a word without further information is based on perception

Agreement
Associate words with picutes in mind what we believe to be true

Perception
Old perceptions frozen into language force people to experience the world in old fashioned ways

Knowledge and Attention

Beliefs tells us how something may be.
Knowledge tells us how something is.
Learnt knowledge is distilled out of beliefs.



Knowledge and Attention

Knowledge comprise of strategy, practice, method or approach

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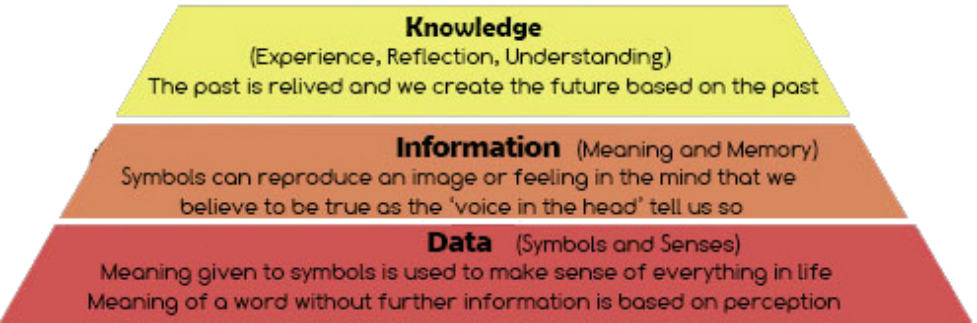

Knowledge and Attention

Knowledge comprise of strategy, practice, method or approach

Beliefs tells us how something may be.
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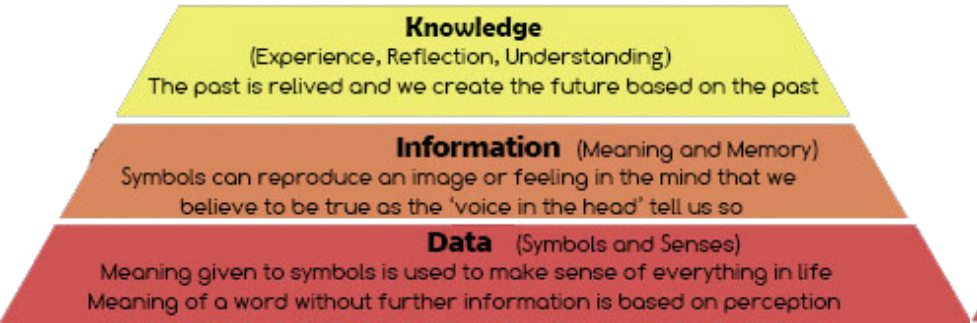
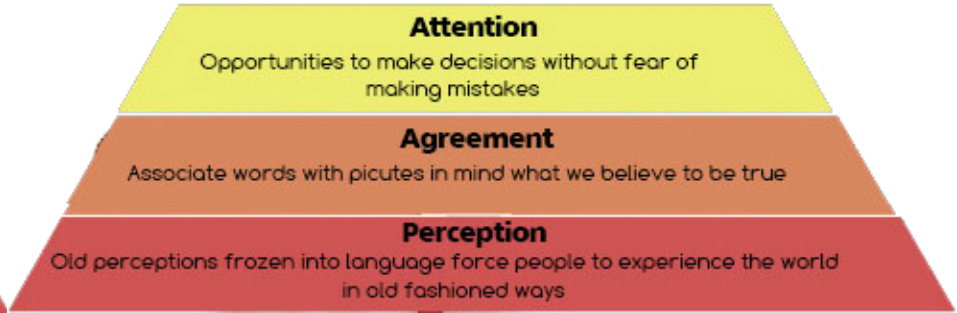
Learnt knowledge is distilled out of beliefs.

We need to change the power of belief we invested in symbols.
Focus Attention on making decisions without the fear of making mistakes.





Knowledge and Attention

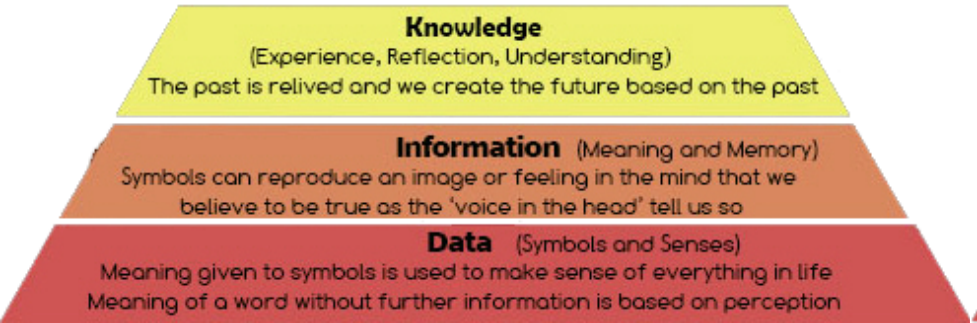
Knowledge comprise of strategy, practice, method or approach

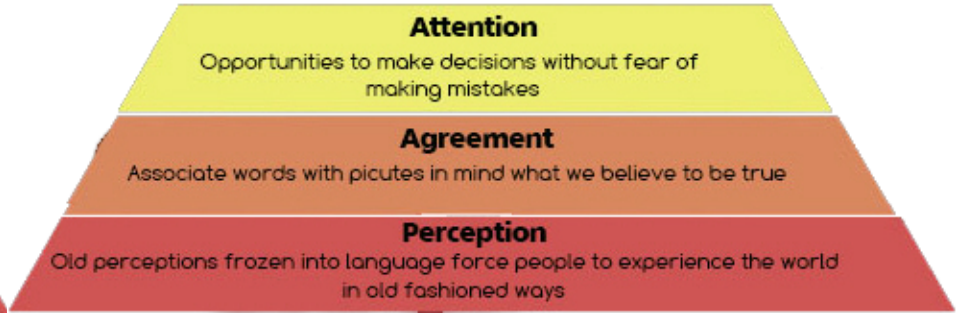
Knowledge is not about what we know, but what we don't know and need to find out.

Beliefs tells us how something may be.
Knowledge tells us how something is.
Learnt knowledge is distilled out of beliefs.

We need to change the power of belief we invested in symbols.
Focus Attention on doing things different without the fear of making mistakes.

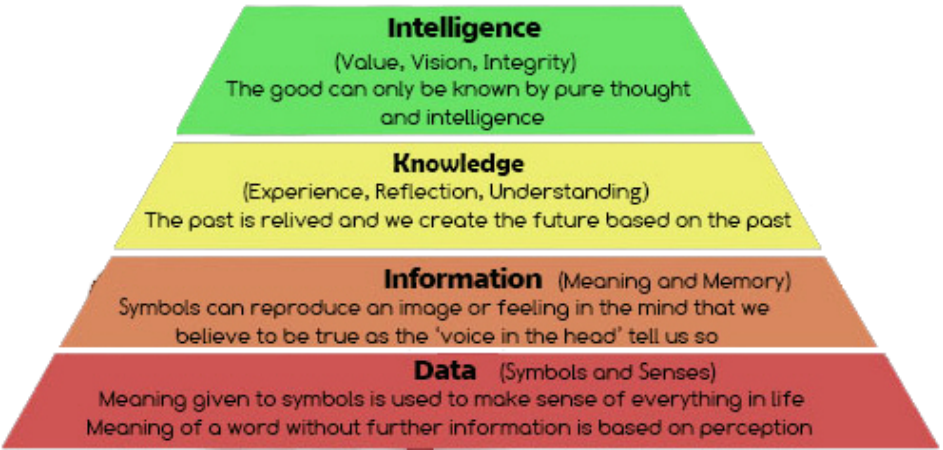
The Solution: We need to create a future no longer based on past experiences





Intelligence and Awareness

Intelligence is a process or innate capacity to use pure knowledge in order to respond to ever-changing requirements.



Knowledge and Attention

Through pure thought and **Intelligence, Awareness** is achieved

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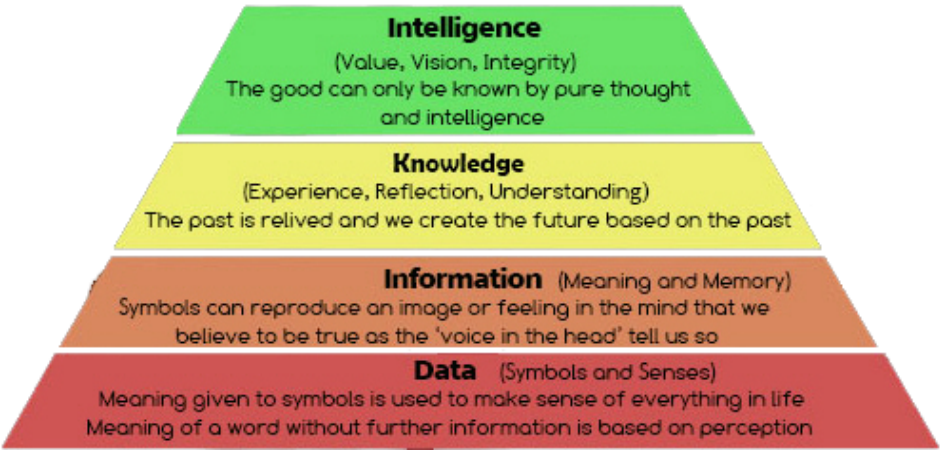

Knowledge and Attention

Through pure thought and **Intelligence, Awareness** is achieved

Intelligence is a process or innate capacity to use pure knowledge in order to respond to ever-changing requirements.

Awareness leads to new improvements, new ideas and new solutions.

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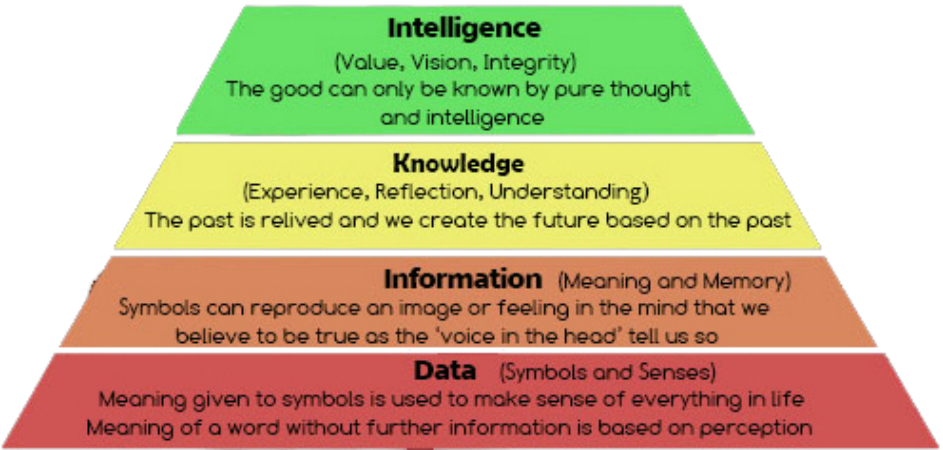
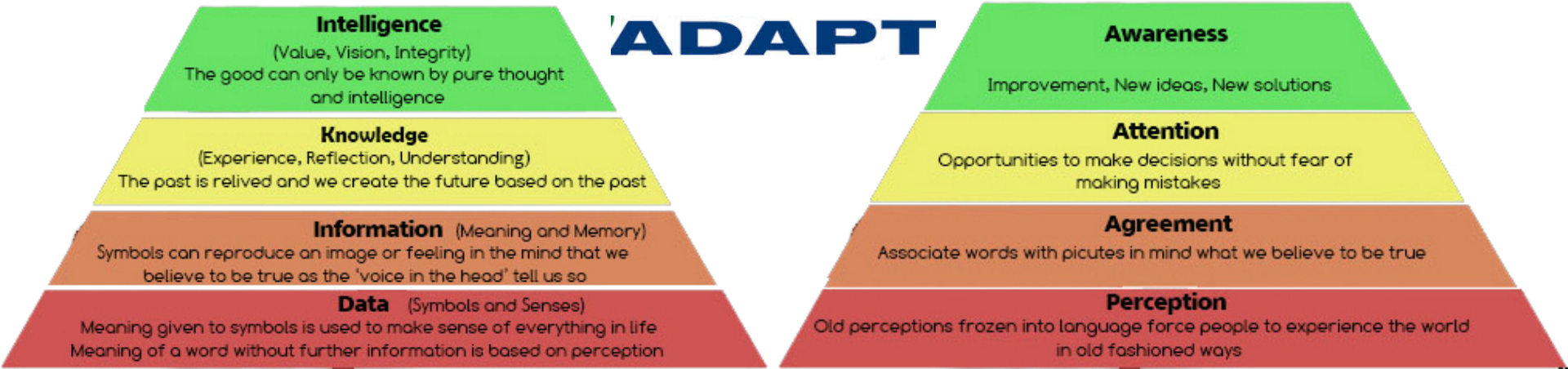


Knowledge and Attention

Through pure thought and **Intelligence, Awareness** is achieved

- - - ADAPTION - - -
is the centre point between
Intelligence and **Awareness**
that determine how an
organization grow and flow

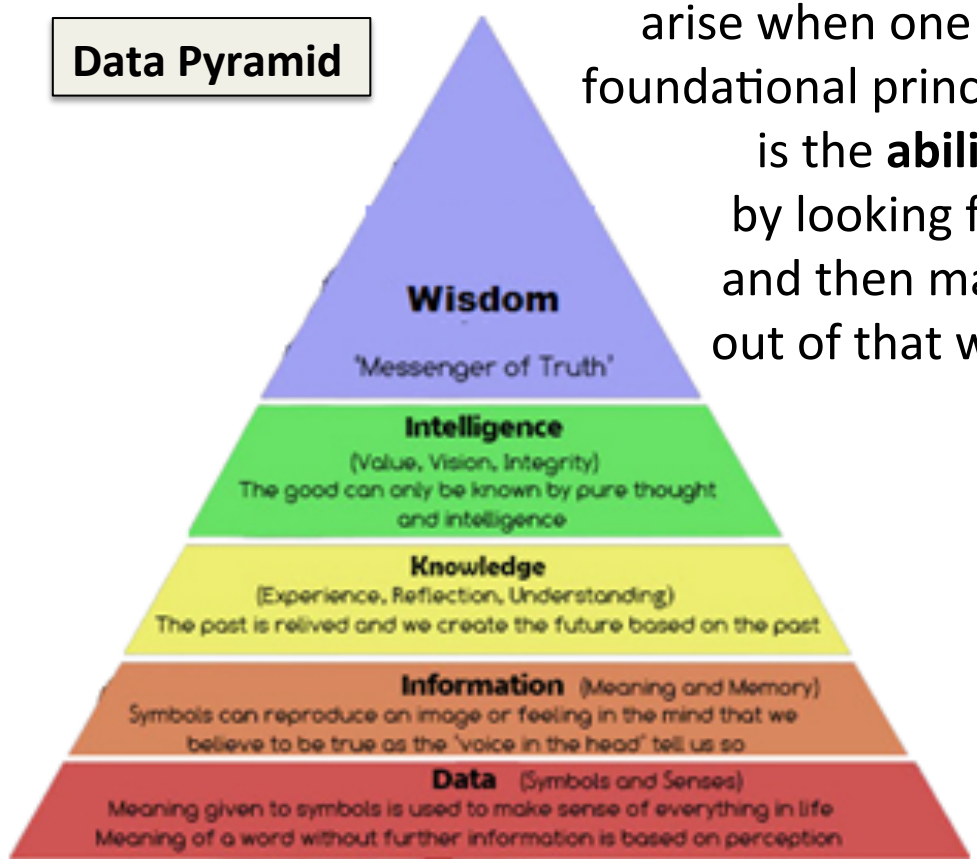
Pure thought activates **creative thinking** that results in **Intelligence** that leads to **Wisdom…**



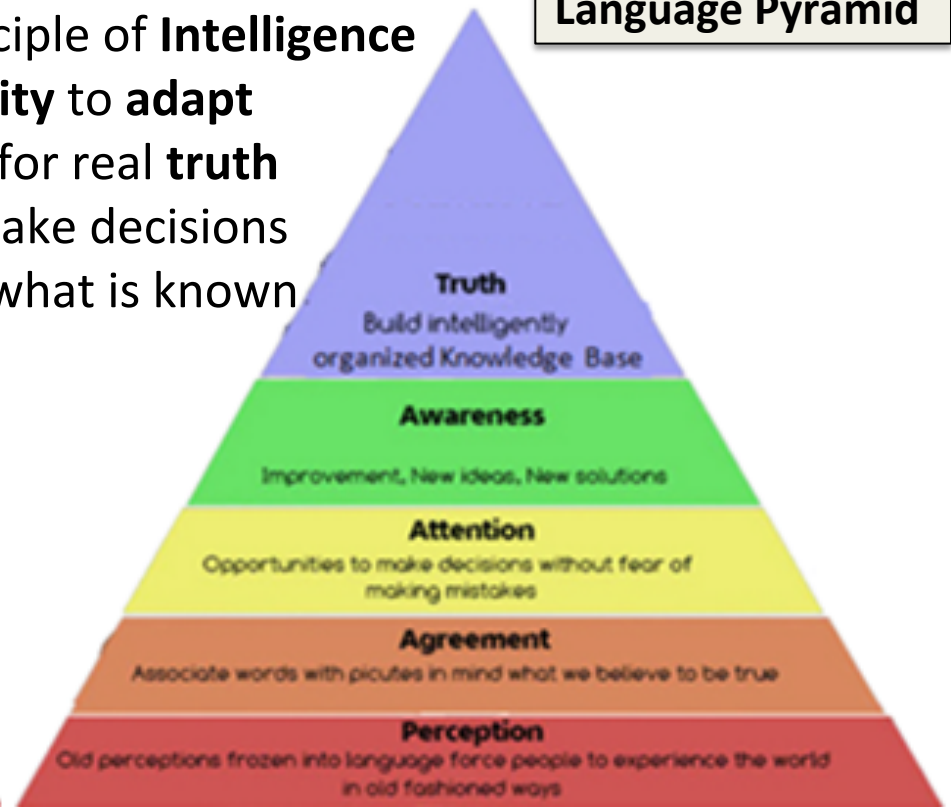
Wisdom and Truth

Wisdom
arise when one understands the foundational principle of **Intelligence** is the **ability** to **adapt** by looking for real **truth** and then make decisions out of that what is known

Data Pyramid



Language Pyramid



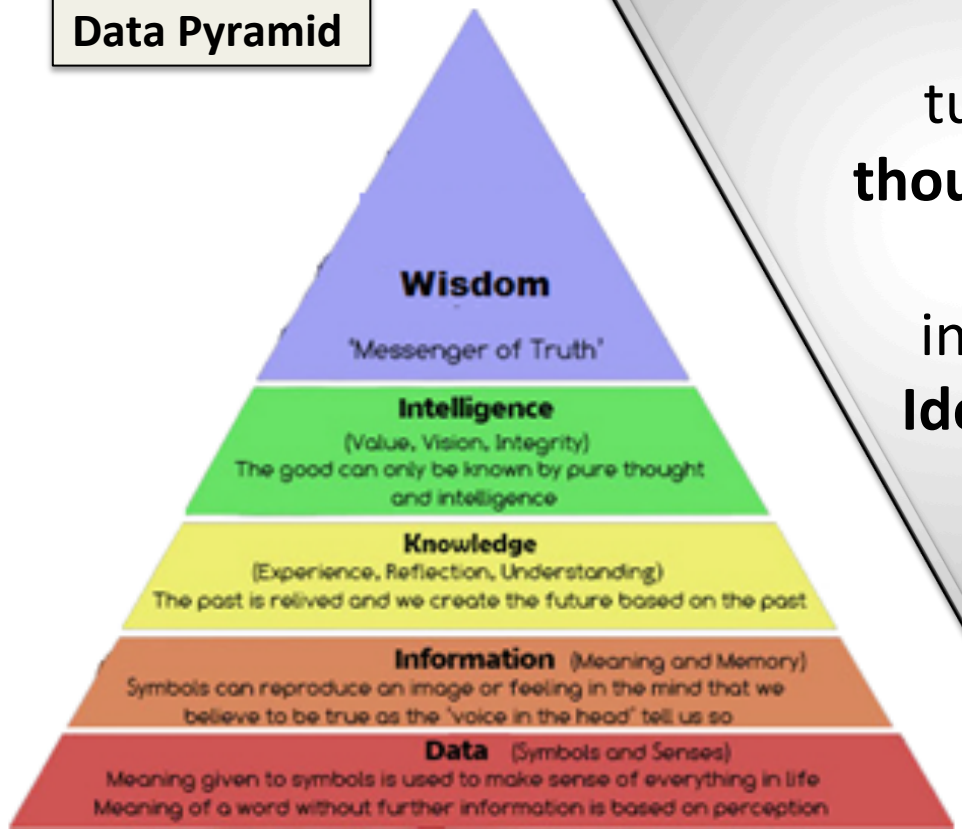
Wisdom and Truth

ISO 8000 Part 100

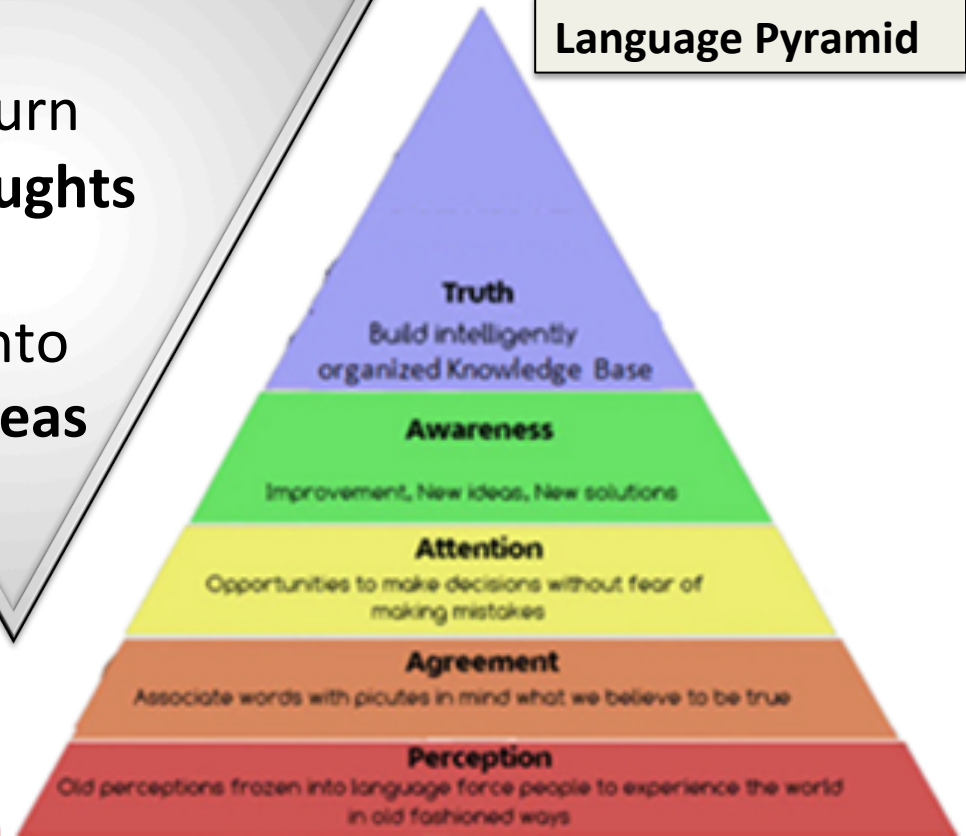
turn
thoughts

into
Ideas

Data Pyramid



Language Pyramid



Creative Ideas expressed and Governed by Dictionary driven DATA

PiLog
MASTER DATA QUALITY SOLUTIONS

Quality Data

is an essential characteristic that determines the reliability of

Master Data

Master Data is at the heart of every

business transaction

application

and

decision

MASTER DATA

About: Master Data

Master data is business critical information about products, services, customers, suppliers, partners, employees and more

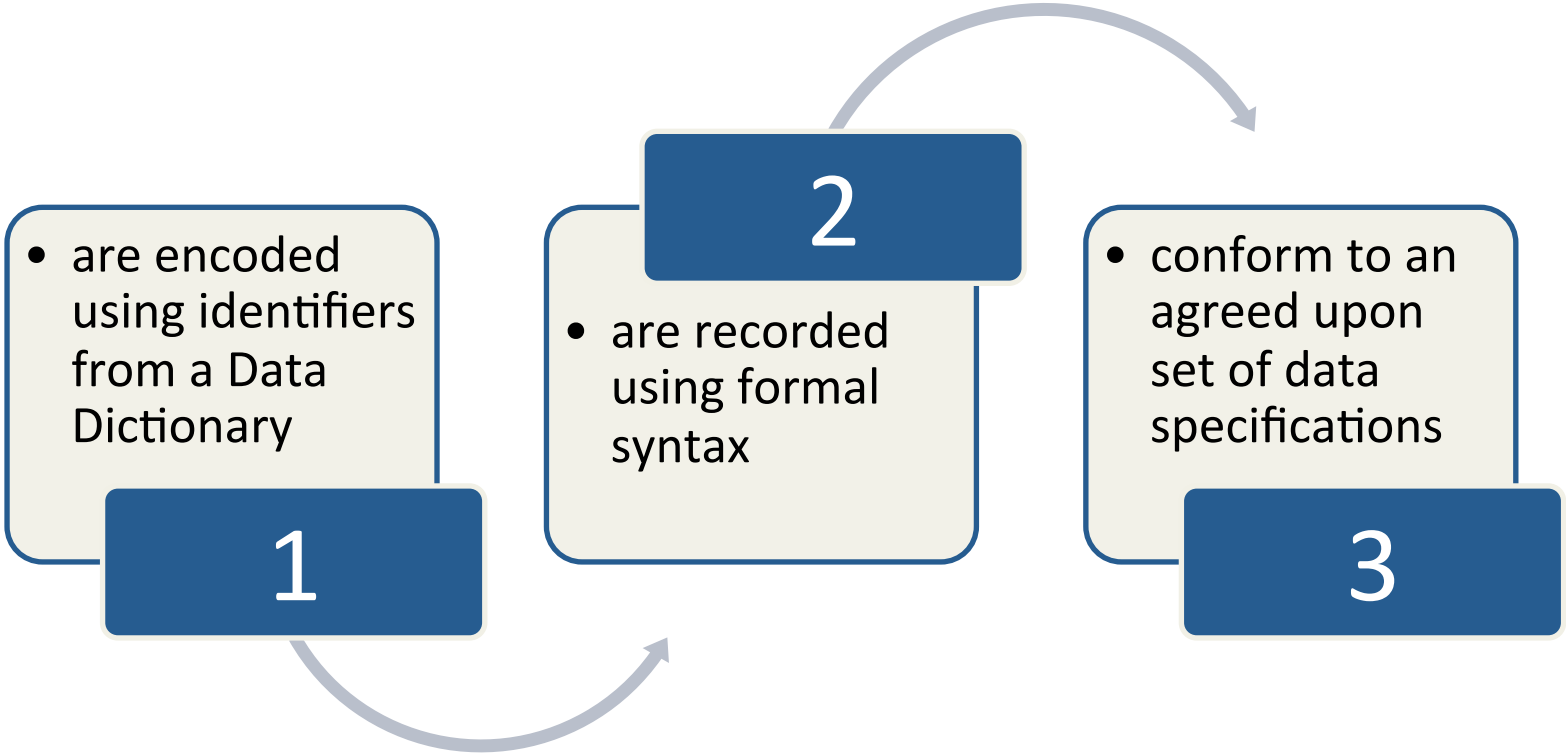
Master Data is the high-value core information used to support critical business processes across the enterprise

STRATEGIC DECISIONS.

MASTER DATA

ISO 8000

Quality Master Data



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MASTER DATA QUALITY SOLUTIONS

ISO 8000

Quality Master Data results in **standardized Products and Services** that are:

Safer

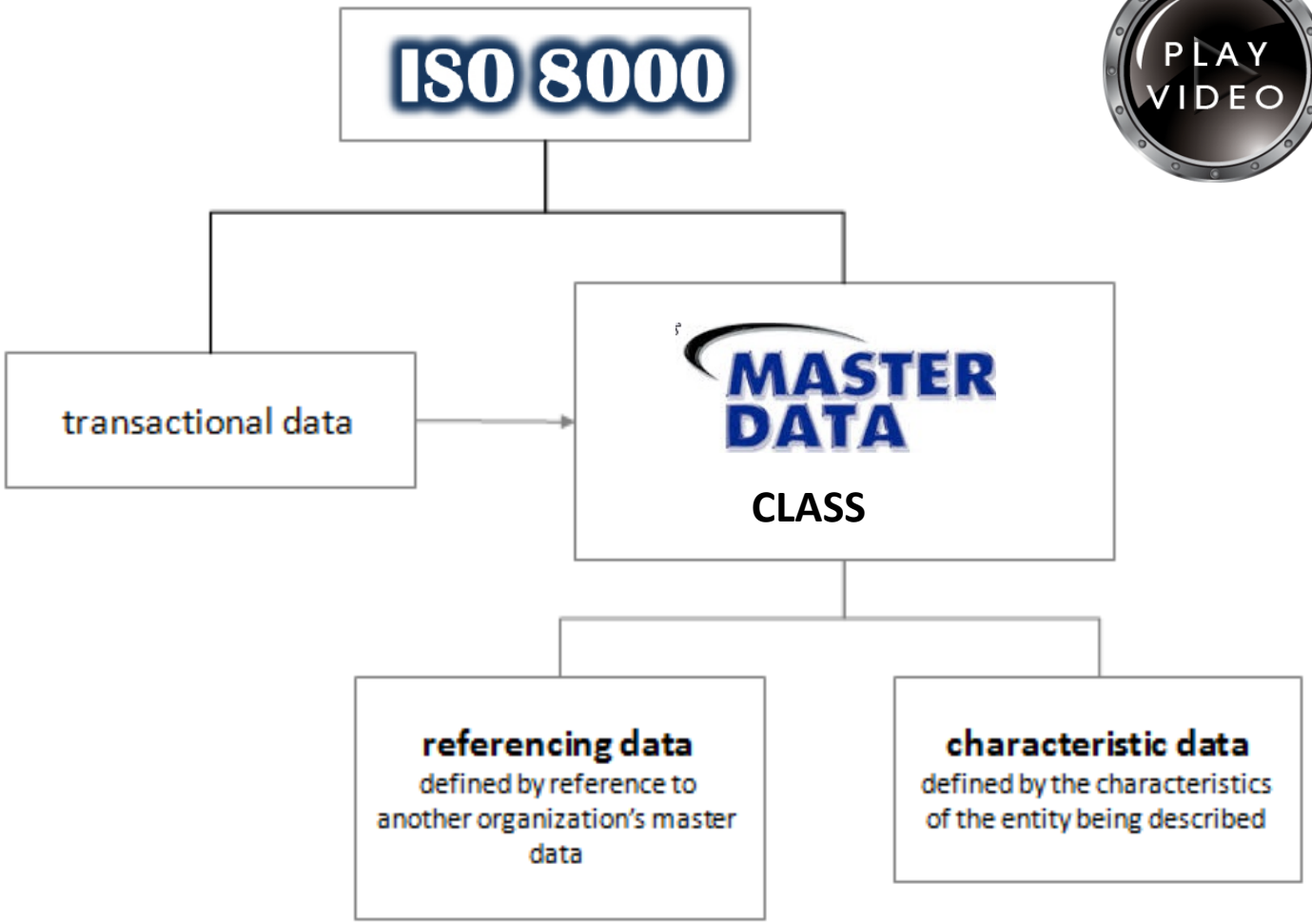
More healthful

Higher quality

More flexible

Vital for communication

Promote Trade and Commerce



Characteristic Data: The description of an entity by the class to which it belongs and a set of property values.

ISO 8000

THE INTERNATIONAL STANDARD FOR DATA QUALITY

The rules formulated in

ISO 8000 Part 100 Standards

ensure Quality Master Data

by doing things in a **consistent way**

in addressing the key **components**

ISO 8000 Components

ISO 8000

Address the key components of quality data

as follows:

ISO 8000

These key components are all dependent on

The quality of the Data Capture Process

ISO 8000

The key to data quality success resides in the

Intelligent construction of software applications

to prevent data capture error

ISO 8000

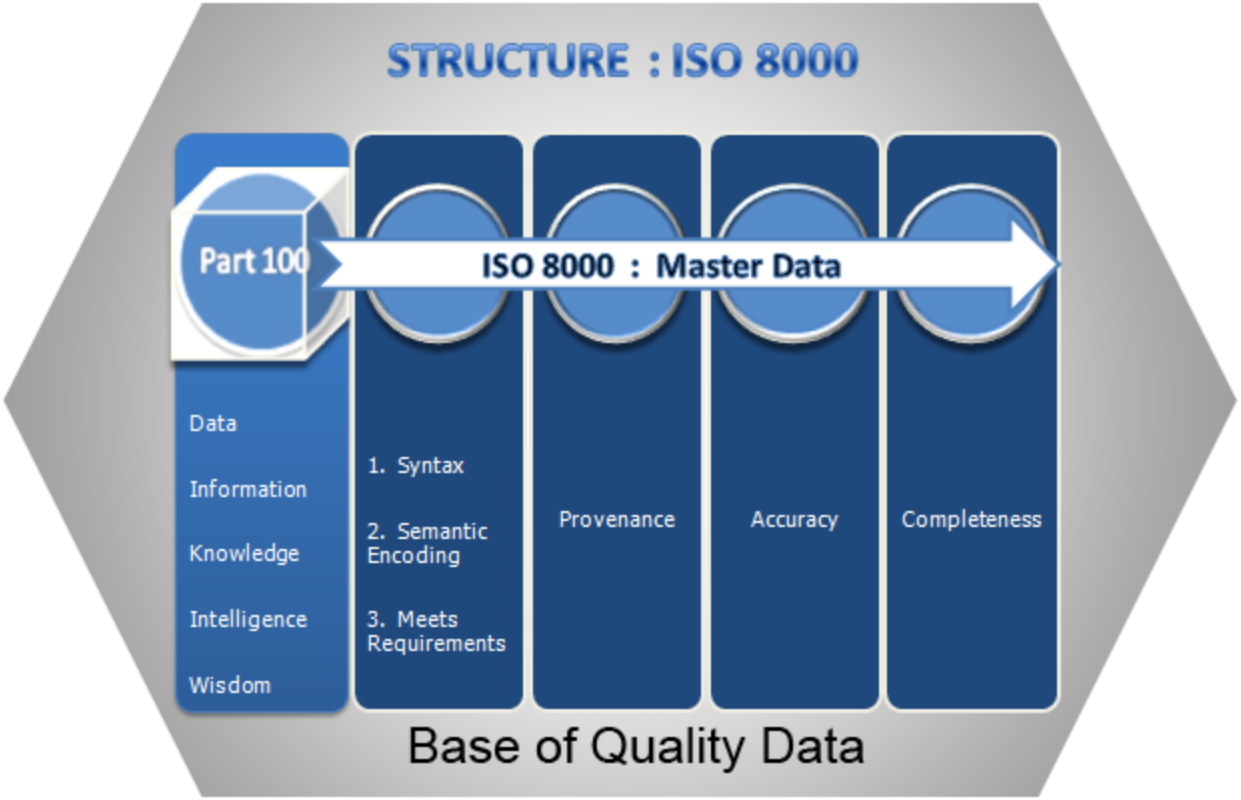
ISO 8000 Standards offer the solution:

- **Data Requirement templates** must be created
- These data requirement templates are constructed by retrieving **coded concepts** recorded in the dictionary
- Information must be stored in an open format for **portability** between software applications

ISO 8000 STANDARDS

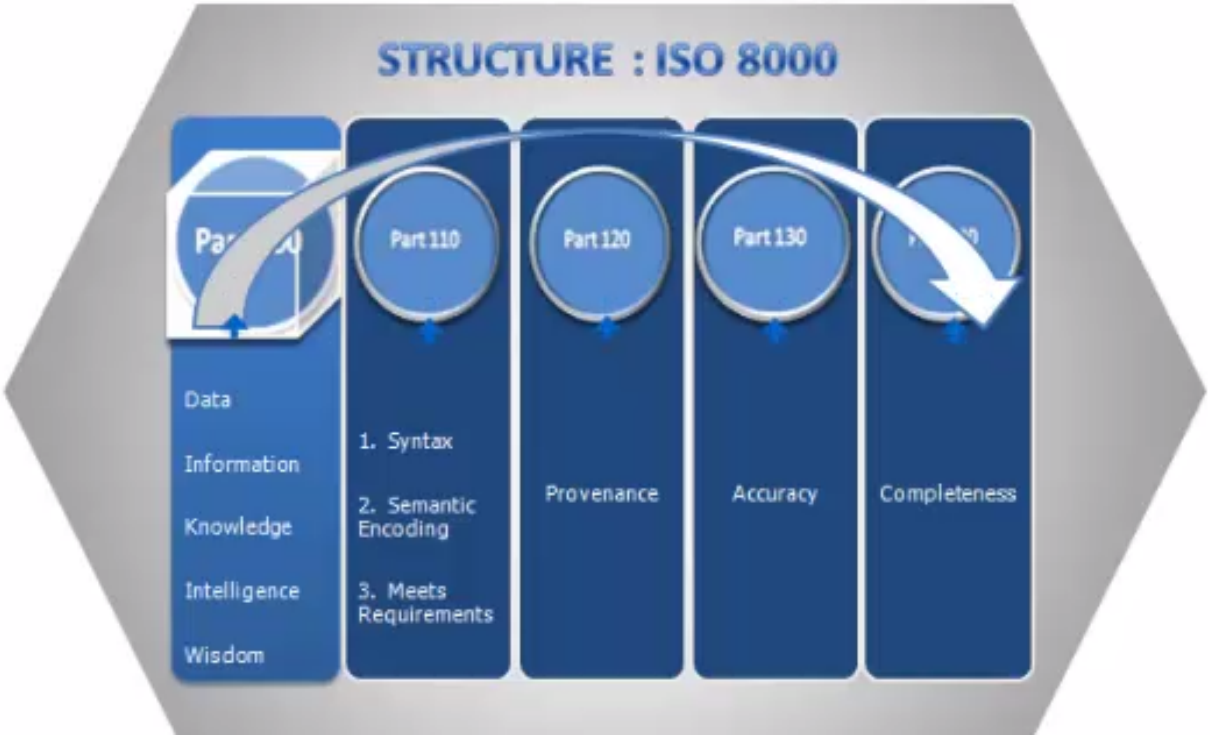
ISO 8000

The **structure** of ISO 8000 forms the base of quality data once recorded in an Open Technical Dictionary (OTD).



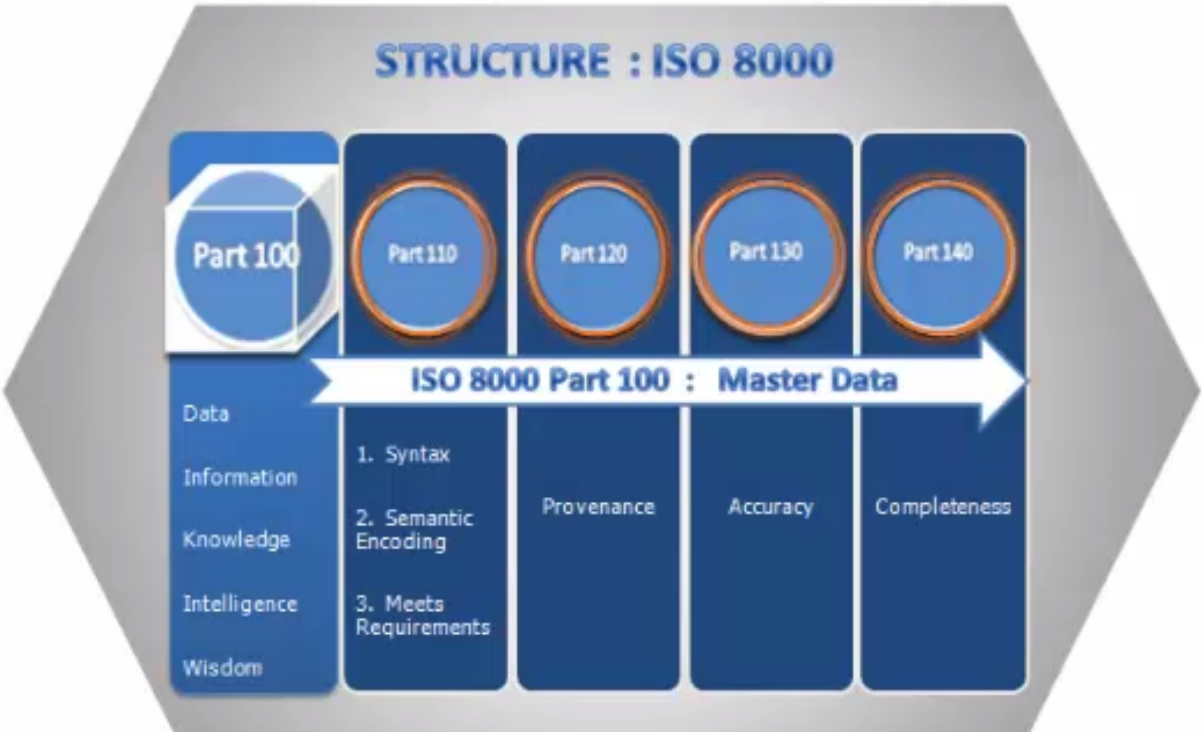
ISO 8000

ISO 8000 standards can be divided into parts



ISO 8000

Each part being a standard in its own right....



ISO 8000

ISO 8000 Standards: General Requirements

The Master Data message must unambiguously state all needed information:

1. Specify a formal **syntax**.

2. Specify data requirements that are **machine-readable**.

3. **Refer** explicitly to the data requirement and the syntax to which **it complies**.

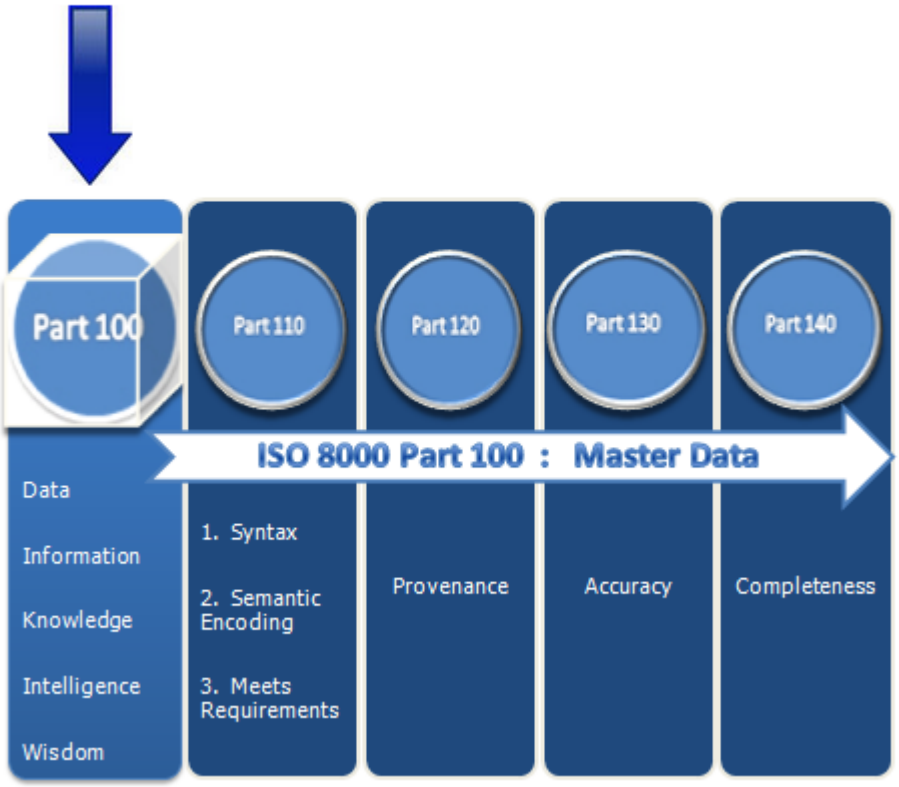
4. Have syntax and data requirements that are **computer verifiable**.

5. Refer to data dictionary entries in the form of unambiguous **identifiers** belonging to an **international recognized scheme**.

ISO 8000 Part 100

Part 100: Deals with insight into the whole truth

around quality data which lie at the root of our thinking



Deals with the ability to understand information and being

able to communicate the meaning of the information to others

ISO 8000

Incorrect information produces incorrect Knowledge

Incorrect knowledge is misleading and can lead to

incorrect decisions, wasted effort

and damaged processes

ISO 8000

Master Data Management

requires an understanding and agreement

about the meaning of terminology

Hence, the natural role of taxonomy

ISO 8000

Taxonomy is about naming concepts, coming to a consensus on the exact meaning of each named concept and then using these names consistently across the enterprise

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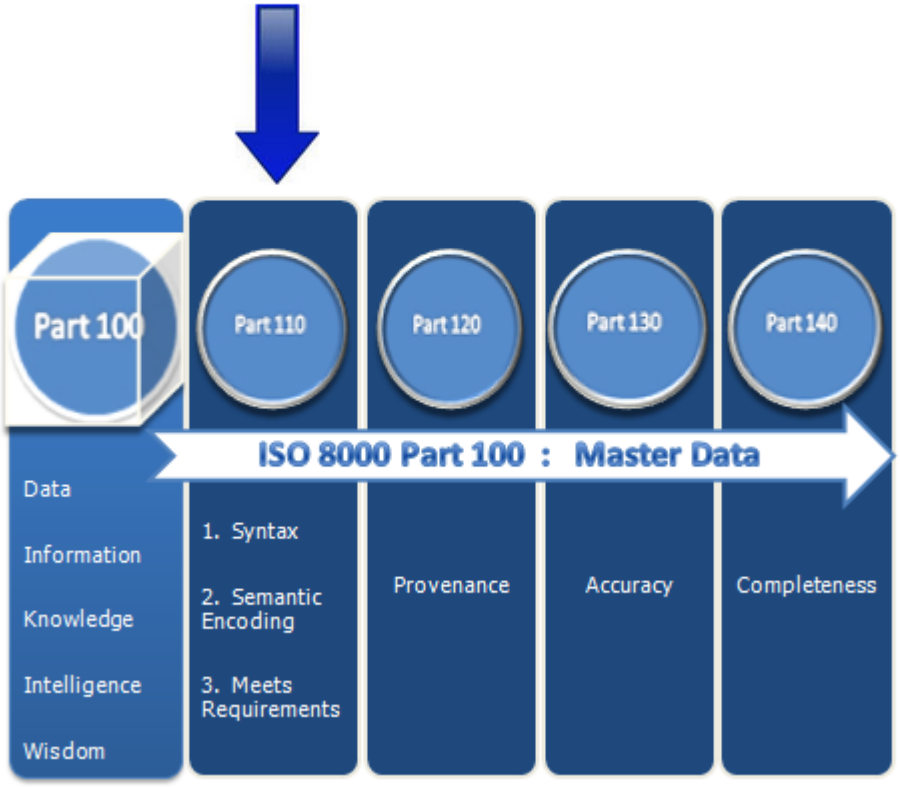
ISO 8000 Part 110

Part 110: Describes the use of syntax, semantic encoding and meets requirements.



Syntax and **Semantic Encoding** are terms used in relation to aspects of **language**

ISO 8000

Syntax: refers to formal rules governing the construction of valid statements in a language

Syntax is achieved in the way that words are put together to form phrases and sentences.

Example Syntax : in the OPEN TECHNICAL DICTIONARY:

CONCEPT TYPES | CONCEPTS | DESCRIPTIONS | UNIQUE ID'S

	Concept Type	Term	Language	Definition	Abbreviation	Label	Org Name	Domain	Manuf	Active Ind	Concept IRDI
☐	Class	BATTERY, DRY CELL	English US	A battery, composed of one cells forming a single unit, which may or may not be recharged and whose electrolyte is not in fluid form.	BATT DRY CELL	-	VOLTEX	PRODUCT	-	Y	1007-1#01-086007#1

SYNTAX

ISO 8000

Semantics: refers to the set of rules which give

the meaning of the statement

Semantic Encoding: is the technique of replacing natural language terms in a message with identifiers that reference data dictionary entries.

Example Semantic Encoding : in the OPEN TECHNICAL DICTIONARY

CONCEPT TYPES

CONCEPTS

DESCRIPTIONS

UNIQUE ID'S

Concept Type	Term	Language	Definition	Abbreviation	Label	Org Name	Domain	Manuf	Active Ind	Concept IRDI
Class	BATTERY, DRY CELL	English US	A battery, composed of one cells forming a single unit, which may or may not be recharged and whose electrolyte is not in fluid form.	BATT DRY CELL	-	VOLTEX	PRODUCT	-	Y	1007-1#01-086007#1

SEMANTIC ENCODING

ISO 8000

Meeting Requirements is the sum total of

ISO 8000 Part 100 and 110

Meeting Requirements

ISO 8000 Part 100:

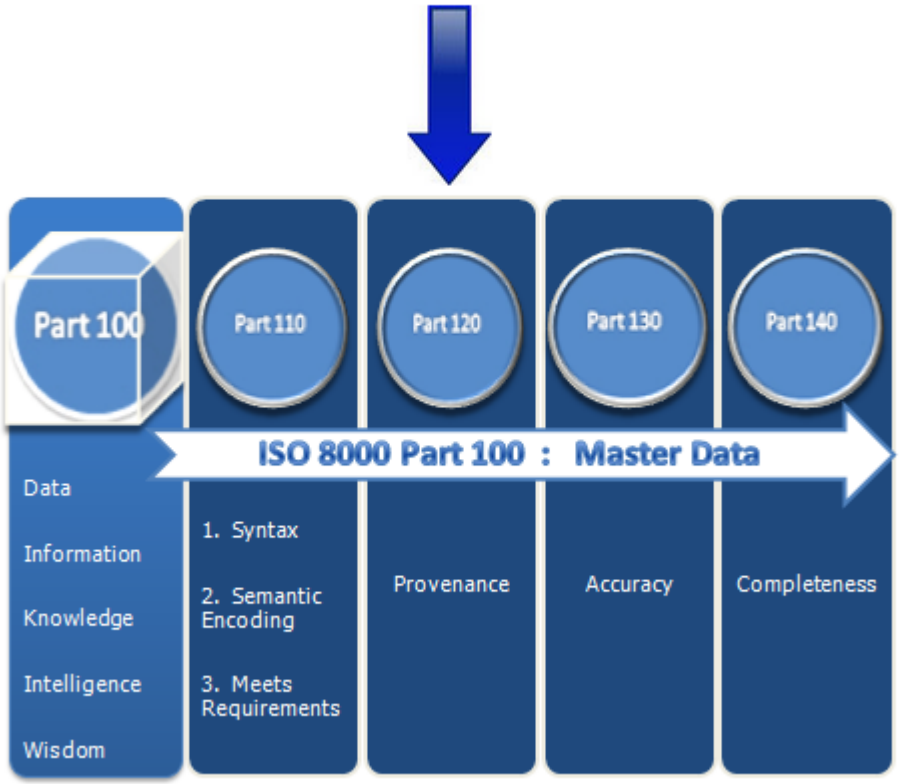
Deals with the ability to understand information and being able to communicate the meaning of the information to others.

ISO 8000 Part 110:

Deals with the intellectually disciplined process to actively and skilfully conceptualize, apply, analyze, synthesize and evaluate information.

ISO 8000 Part 120

Part 120: Deals with provenance that describes the history of data.



Provenance: Is the derivation history of a **data property** starting from its original source.

ISO 8000

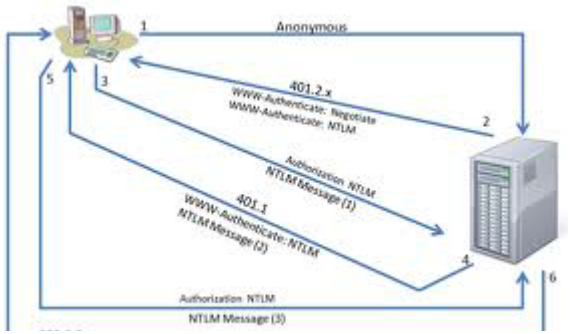
Provenance

Provenance describes the context of database systems

Provenance provides descriptions of the original data

Provenance explains the process by which it arrived in the database

Provenance provides a validity check of the source of the information



Track Info

Provenance used in conjunction with **Part 100** and **Part 110**

bridge the solution in overcoming

Big Data Security issues in Cloud

Provenance

Authentic data with **No duplications** results in **Actionable Information**

Actionable Information: means having **Quality Data Information** immediately available in order to deal with the situation at hand.

Authentic data

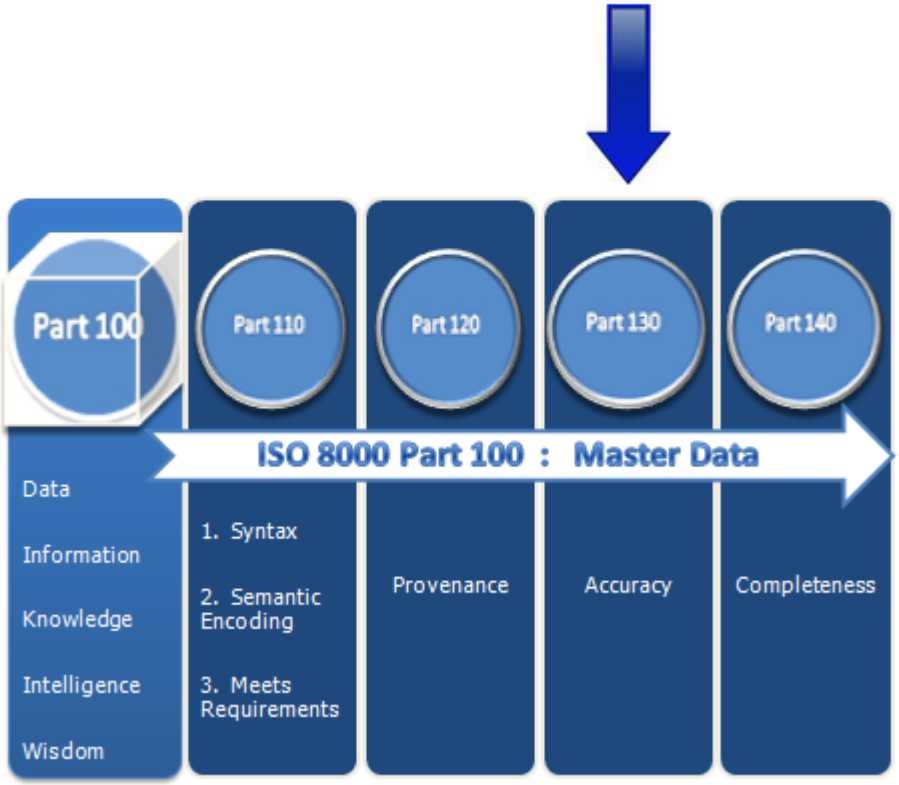
PART 100

No Duplications

PART 110

ISO 8000 Part 130

Part 130: Describe the need for accuracy in data quality.



Accuracy: Refer to the derivation of a **property value** starting from its original source

ISO 8000

Accuracy

Accuracy describes the context of dictionary

Accuracy provides descriptions of the original property values

Accuracy explains the process by which it arrived in the dictionary

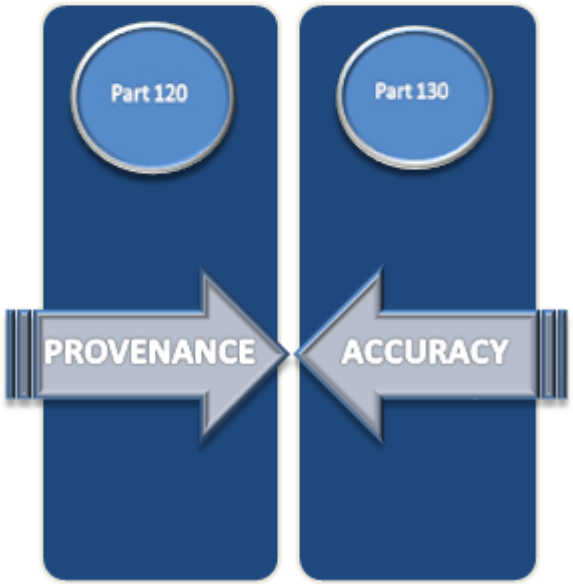
This information must be verifiably accurate….

To ensure verifiable accuracy…

Provenance determine the **Accuracy**

to which

results are produced



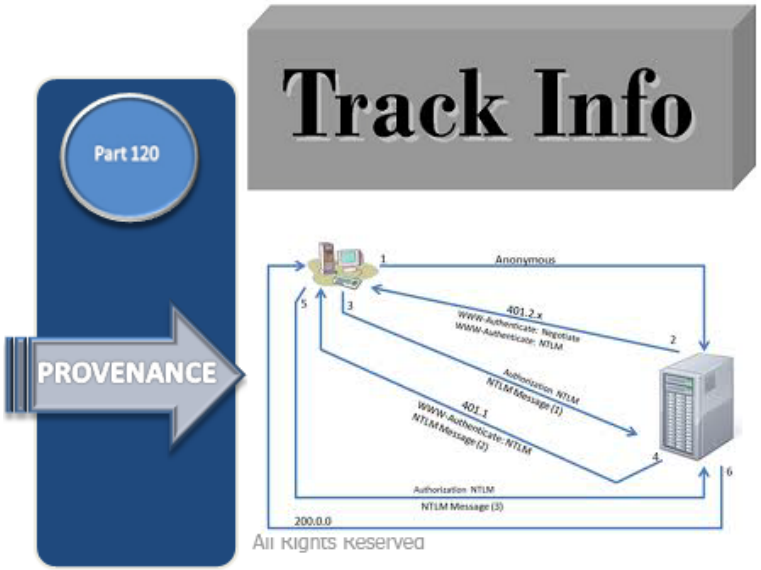
Accuracy

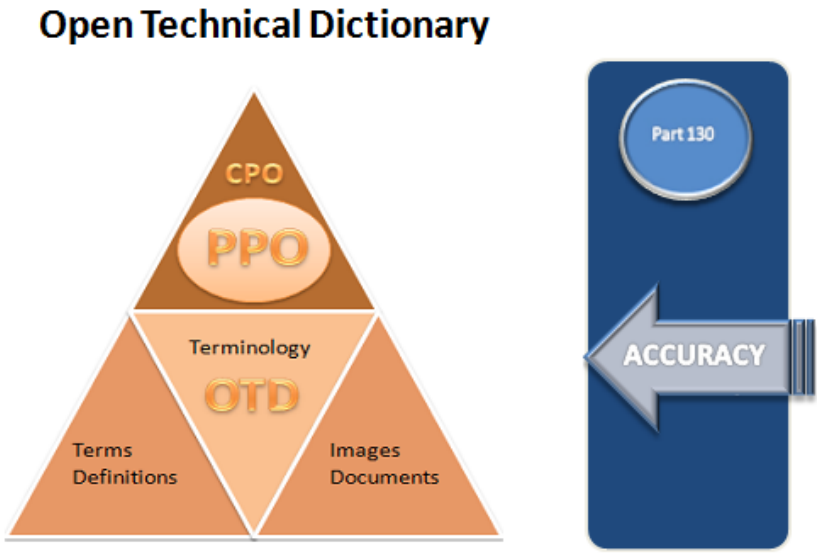
Provenance provides a validity check

of the source of the information

Accuracy provides true values

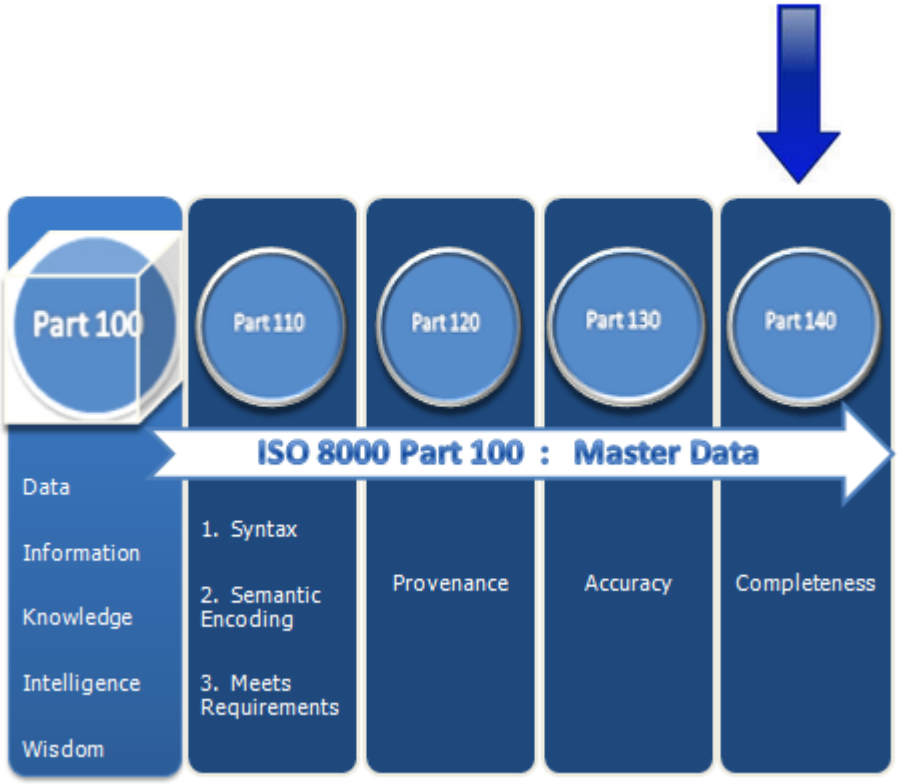
which predicts future performance





ISO 8000 Part 140

Part 140: Covers completeness at the data element level.



Every data requirement has mandatory as well as optional aspects

Incomplete optional information can meet the expectations of the user

'Expected completeness' is achieved...

ISO 8000

Completeness

'Expected Completeness' in data is considered **complete** with the following elements in place:

Part 100: To understand and communicate information

Part 110: To conceptualize, apply, analyze and synthesize information

Part 120: Authentic data with no duplications, results in Actionable Information

Part 130: True values predict future performance

Part 140: Completeness, is based on Truth

Application of **Requirements** as described in ISO 8000 Part 100 to Part 140

Construction of the OPEN TECHNICAL DICTIONARY according to ISO 8000 Standards Part 100 - 110

ISO 8000

OTD

OPEN TECHNICAL DICTIONARY – ISO 8000 Part 100 and Part 110

1. The **dictionary** must consist out of **coded concepts**

	Concept Type	Term	Definition	Language	Concept Id
☐	Class	valve	a mechanism for discharging products from aerosol-type dispensers	English US	1007-1#01-077516#1

2. Each **concept type** must be linked to a **unique Identification Number**

	Concept Type	Term	Definition	Language	Concept Id
☐	Class	valve	a mechanism for discharging products from aerosol-type dispensers	English US	1007-1#01-077516#1

3. Meaningful definitions need to be constructed

	Concept Type	Term	Definition	Language	Concept Id
☐	Class	valve	a mechanism for discharging products from aerosol-type dispensers	English US	1007-1#01-077516#1

REQUIREMENTS ISO 8000

OTD

HOW TO: Example of **OPEN TECHNICAL DICTIONARY**

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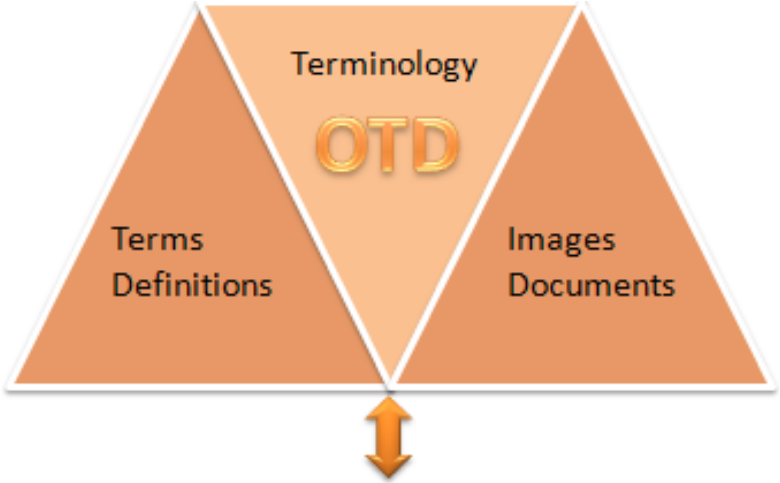
ISO 8000

OPEN TECHNICAL DICTIONARY

OTD

Coded Concepts
Concept Types
Definitions

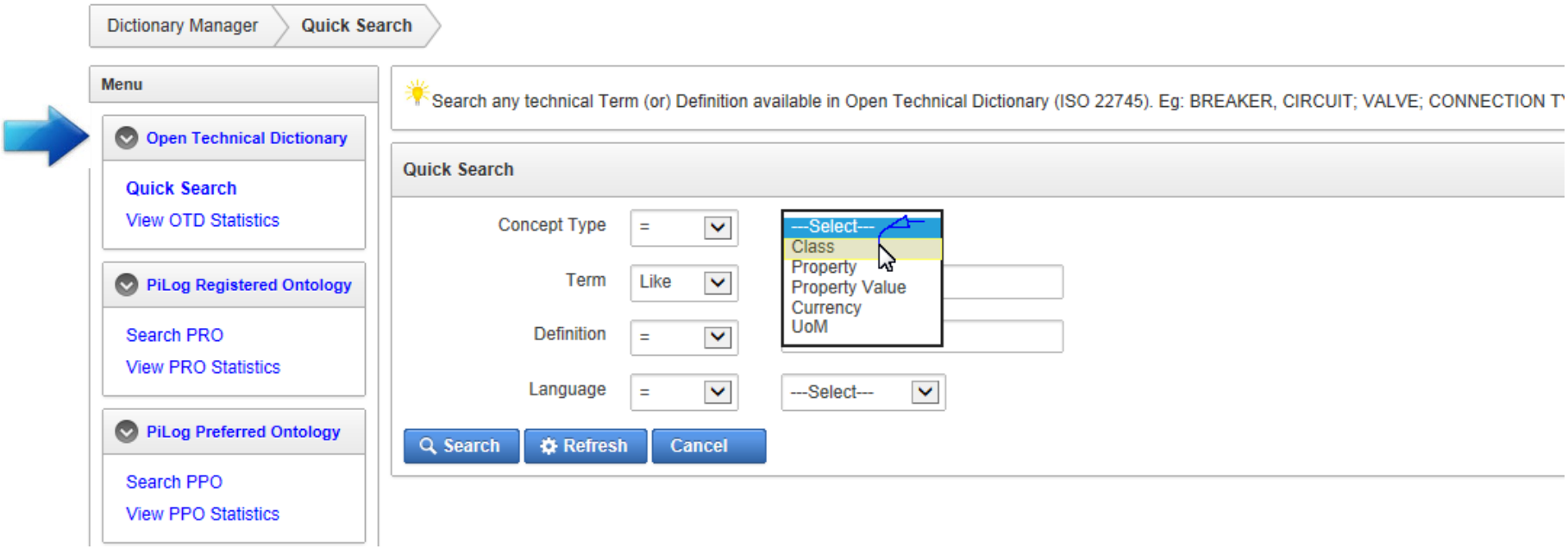


Unique Identifier →

ISO 8000

OTD

Example SEARCH: OPEN TECHNICAL DICTIONARY



ISO 8000

PPO

PiLog Preferred Ontology

is developed by Industry specialists

and highly recommended by PiLog to be used

across different industry verticals

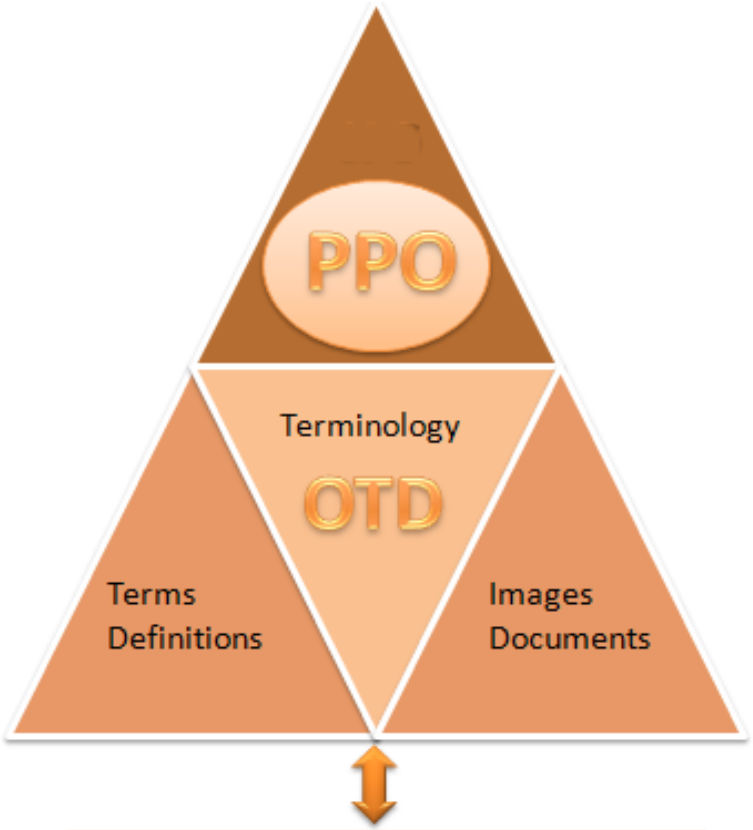
ISO 8000

PPO

PILOG PREFERRED ONTOLOGY

Coded Concepts
Concept Types
Definitions

Coded Concepts
Concept Types
Definitions



Unique Identifier → OTD Public domain Concept Identifier
XXXX-1#G-01#1

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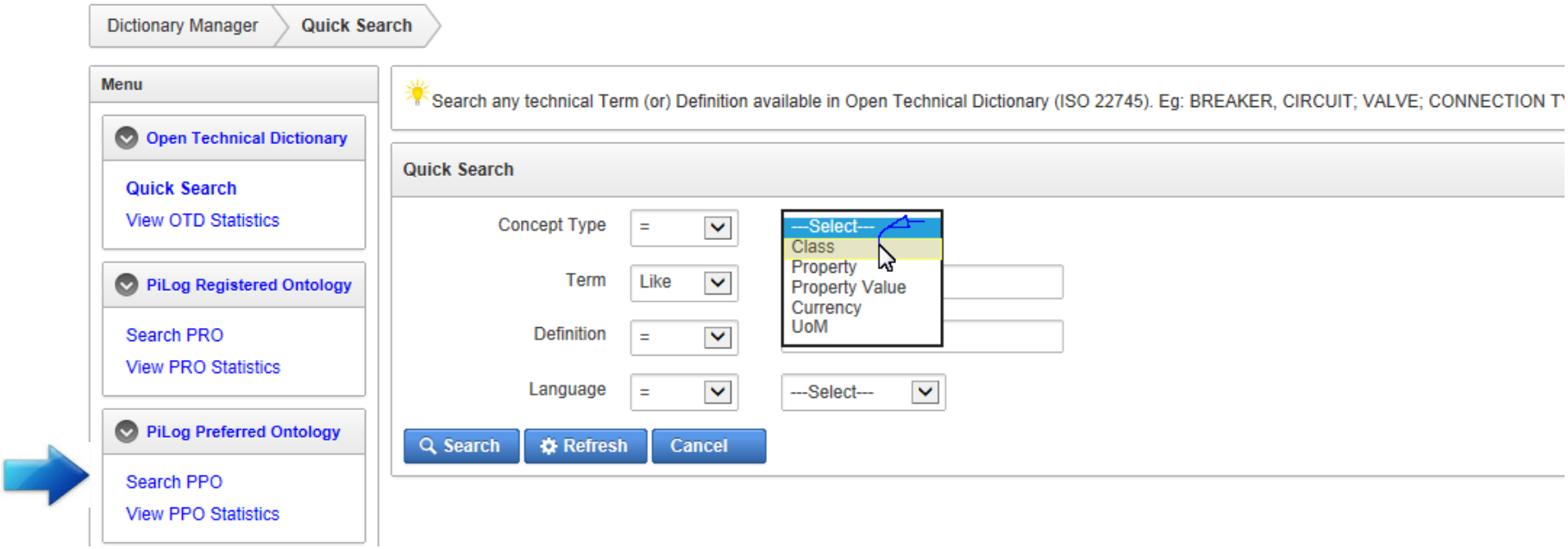
ISO 8000

PPO

Example SEARCH: PILOG PREFERRED ONTOLOGY



ISO 8000

CPO

Client Preferred Ontology

is specific to an organization

ISO 8000

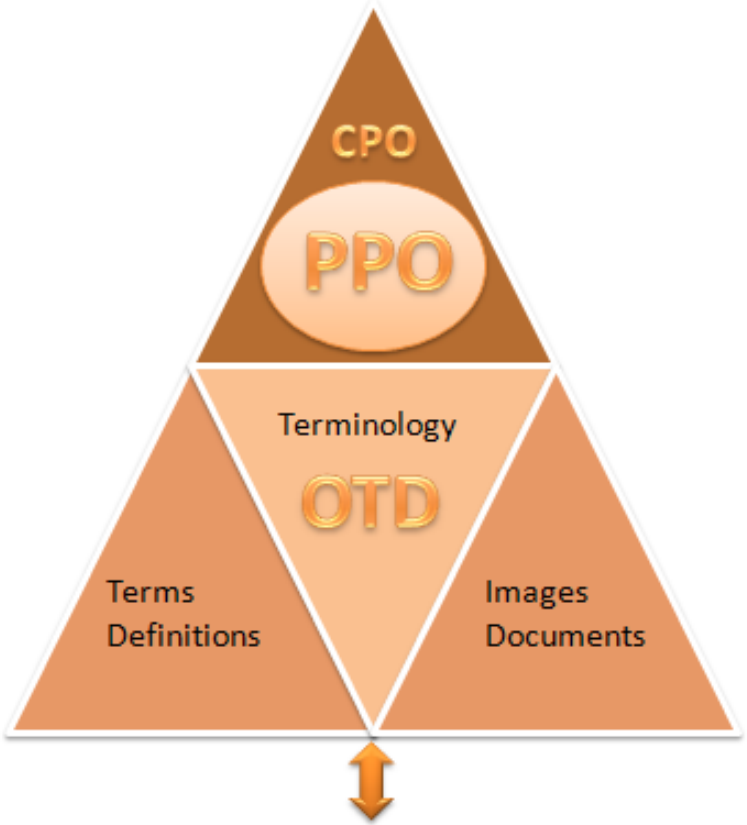
CLIENT PREFERRED ONTOLOGY

CPO

Coded Concepts
Concept Types
Definitions

Coded Concepts
Concept Types
Definitions

Coded Concepts
Concept Types
Definitions



Unique Identifier → OTD Public domain Concept Identifier XXXX-1#G-01#1

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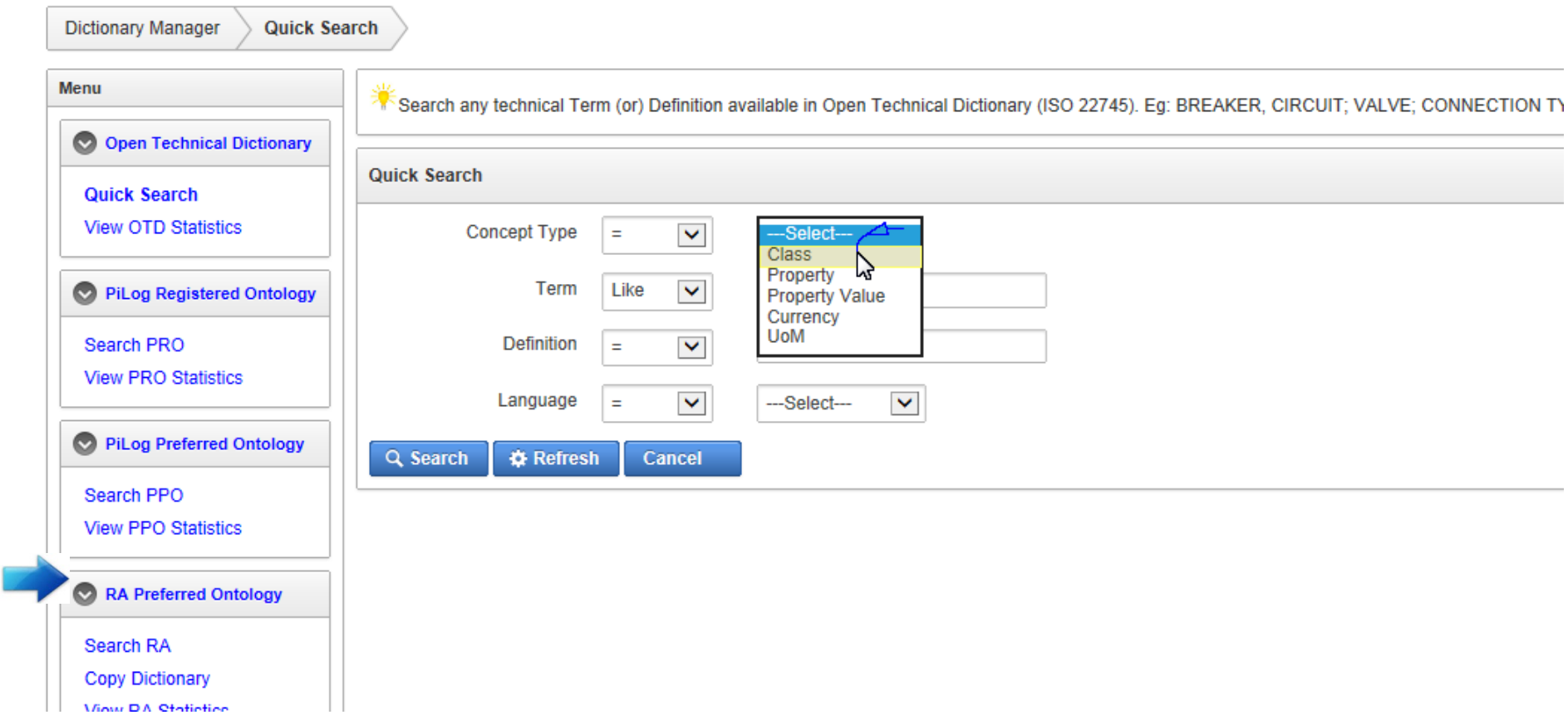
PiLog
MASTER DATA QUALITY SOLUTIONS

ISO 8000

CPO

Example SEARCH: CLIENT PREFERRED ONTOLOGY



ISO 8000 REQUIREMENTS

HOW TO: Example of Meeting Requirements of **OPEN TECHNICAL DICTIONARY**

Meets Requirements

(6) ISO 8000 Standard Requirement:
Must be a specification of characteristic data
i -XML is a representation of data requirements in XML
d-XML is a representation of a rendering guide in XML

ISO 8000 - Part 110

(6) See PiLog MDRM Compliance

Construction of
DATA REQUIREMENTS
according to
ISO 8000 Standards Part 100 - 140

ISO 8000

Data Requirements

Is a set of rules

describing items belonging to a particular **Class**

using **entries** from the **Data Dictionary**

ISO 8000

Data Requirements are required

as a pre-requisite to measure **Data Quality**

Procedures

Quality data refer to:

Step 1	Step 2	Step 3
Data that meets requirements	Data that is unambiguously encoded	Data that is application independent

Data that meets requirements

Step 1

ISO 8000

Collect

- Information collected during the specification phase

Analyze

- must be analysed

Identify

- by identifying attributes to determine the structure and quality of the Data Requirement

Data that is unambiguously encoded

Step 2

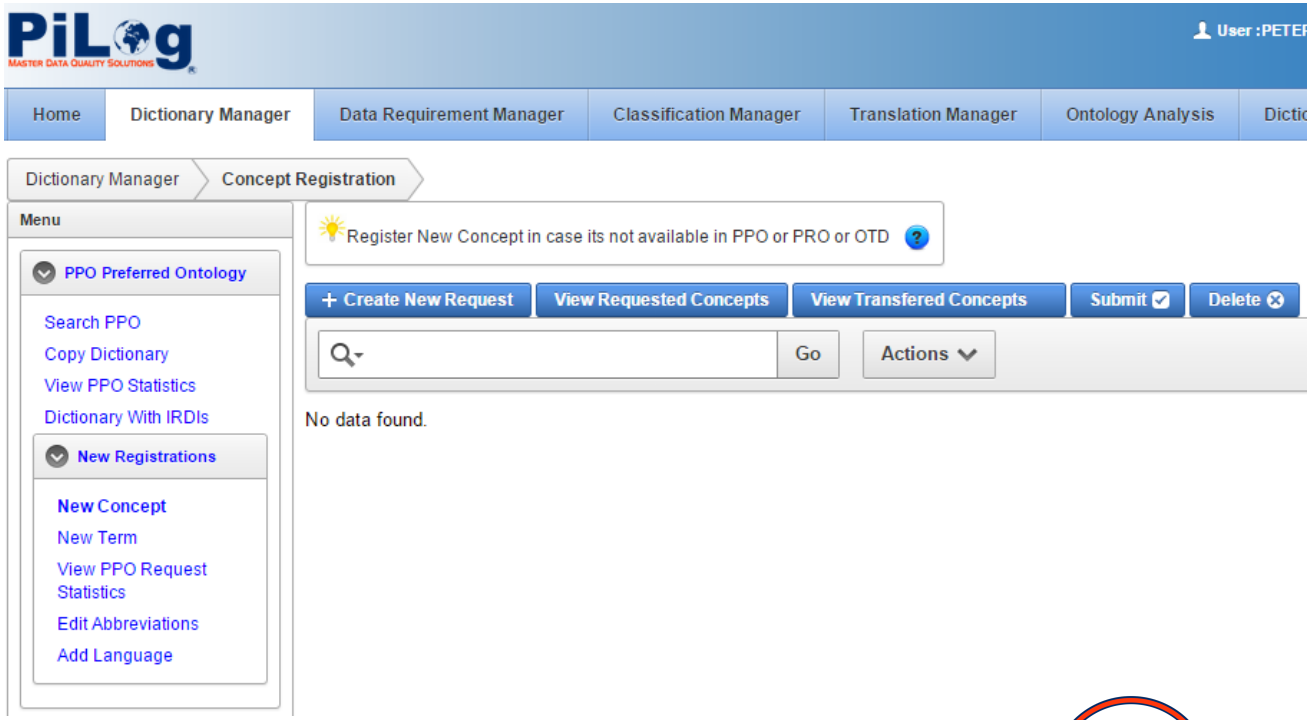
ISO 8000

Rules:

1. All identified concepts required in the construction of a **data requirement** must exists in the **Data Dictionary**

*2. If not, it must be registered in the Open Technical Dictionary

*



Data that is unambiguously encoded

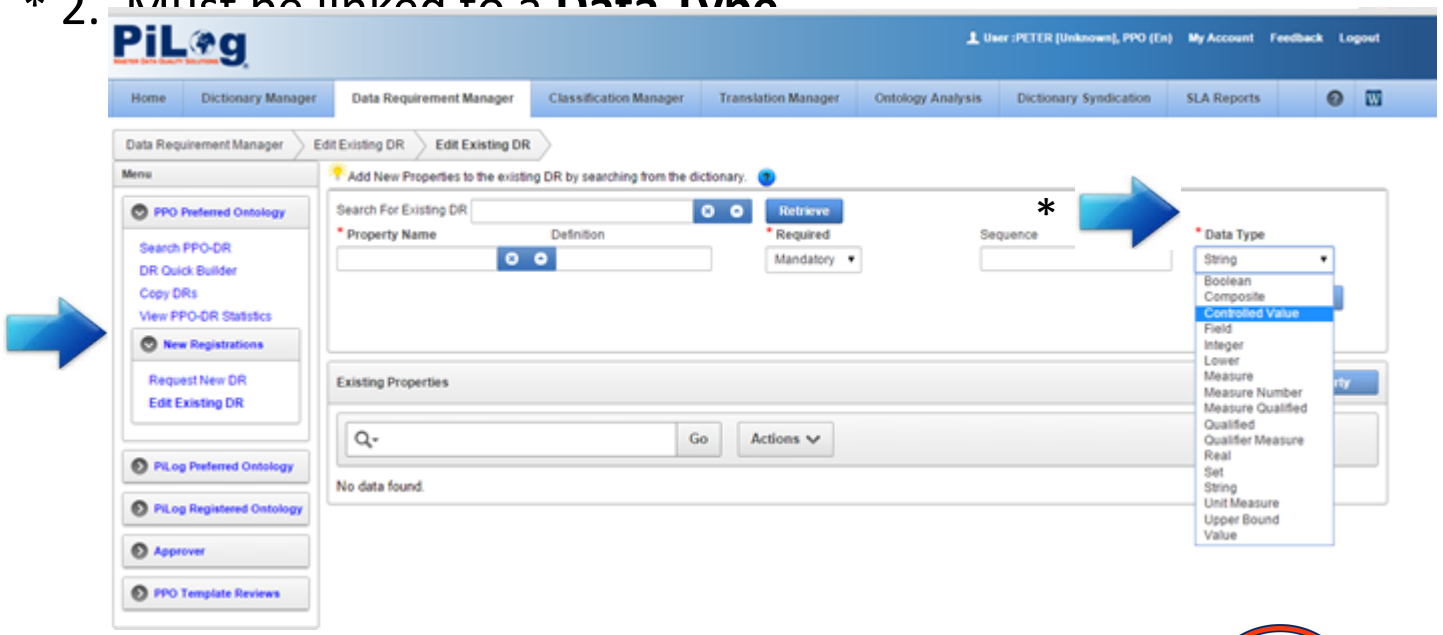
Step 2

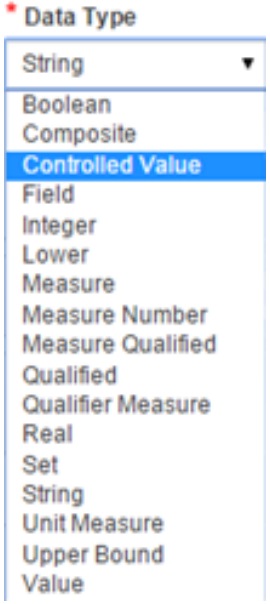
ISO 8000

During construction of **the Data Requirement:**

1. Each **concept** collected from the **Open Technical Dictionary**

* 2. Must be linked to a **Data Type**





Data that is unambiguously encoded

Step 2

ISO 8000

Descriptions

Descriptions are rendered that include

all the properties and property values

that form part of the

Data Requirement

Material #	Catalog #	Record Status	Record Created By	Description Type	Description
AGA0000163	CN163	CREATED	PETER	TECH (en_US)	BEARING, BALL,10 MM,20 MM,30 MM,4,Stainless Steel,5000 RPM,Box; FFT163; PART NUMBER: 6203/A OEM: SKF; DRAWING NO: DR123 v1 Par.12

Data that is unambiguously encoded

Step 2

ISO 8000

Upon completion a

Data Requirement Template

is produced for future use

Data Requirement (Template) of BATTERY, DRY CELL

Go | Actions

1 - 11 of 11

Property Name	Definition	Required	Sequence	Data Type	Language
TYPE	A subdivision into a particular classification.	Mandatory	1	String Type	English US
POTENTIAL	The rated voltage of the item.	Mandatory	2	String Type	English US
CURRENT CAPACITY	The amp hour rating.	Mandatory	3	String Type	English US
COMMERCIAL SIZE	The size of the item as it is commercially known.	Optional	4	String Type	English US

Data that is unambiguously encoded

Step 2

ISO 8000

REQUIREMENTS

HOW TO: Example of **Item Entry Control** for **Master Data**

(2) ISO 8000 Standard Requirement:

1. The quality of the data capture process
2. Data that meets requirements
3. Data that is unambiguously encoded
4. Data that is application independent

(2) See PiLog MDRM Compliance

Data that is application independent

Step 3

EXCHANGE OF DATA
according to
ISO 8000 22745

Data that is application independent

Step 3

ISO 8000

The **Data Requirement** is stored in the database in **XML format**

ISO 22745 is a specific implementation of **ISO 8000 Part 110** for parts cataloguing based on **XML**

The **ISO 8000 Part 110** implementation adopted by NATO defines all of the components necessary to meet ISO Part 110 Standards

Data that is application independent

Step 3

ISO 8000

XML provides a robust and durable **format** for information storage and transmission

```
<?xml version="1.0"?>
<html>
<head>
   <title>Service Subscription </title>
</head>
<body>
   <h1>Service Subscription</h1>
      <form action="http://URI_of_subscription_servlet">
      <table class="subscription_info" width="350">
      <tr class="name"><td>
         Service Name:
      </td>
      <td>
         <input name="service_name"/>
      </td></tr>
           <tr class="method"><td>
             Payment Method:      
           </td>
           <td>
             VISA <input type="radio" name="payment_method"
                                                  checked="checked"/>
```

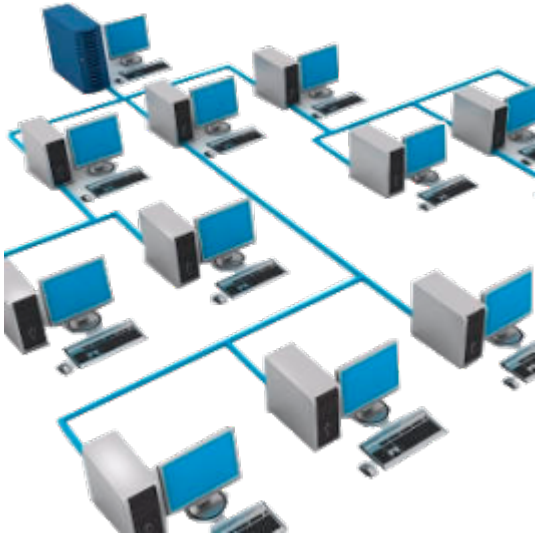
Data that is application independent

Step 3

ISO 8000

XML provides a common syntax for messaging systems

for **exchange of information between applications**



Data that is application independent

Step 3

ISO 8000

DataPortability

Data Portability is the ability to move data among different application programs, computing environments and cloud services

Data should be **independent** with respect to any and all **software applications** that access it at the current time, or might access it at a later time

Data that is application independent

Step 3

ISO 8000

Data that is independent from any licensed software application is referred to as **Portable Data**

Data that is dependent on any licensed software application is in actual fact also **licensed data**

DataPortability

ISO 8000 DATA is portable data independent of any software application

Data that is application independent

Step 3

ISO 8000

REQUIREMENTS

HOW TO: Example of **Data Exchange**

Data Requester

About ISO 8000 -110 and Data Exchange ISO 22745

(3) ISO 8000 Standard Requirement:

To be able to create clear and unambiguous requests for:

1. Characteristic data
2. Reference data
3. The validation of characteristic and reference data

(3) See PiLog MDRM Compliance

Data Provider

About ISO 8000 -110 and Data Exchange ISO 22745

(4) ISO 8000 Standard Requirement:

Automate generation and distribution of requests for data:

1. In a simple format that can be automated by the recipient
2. To create an integrated data exchange system

(4) See PiLog MDRM Compliance

CONCLUSION

ISO 8000

ACTIONABLE INFORMATION

is achieved through the combination of

Provenance, Accuracy and Completeness

ISO 8000

REQUIREMENTS

HOW TO: Measure ACTIONABLE INFORMATION

Provenance determine the **Accuracy**

to which

results are produced

(7) ISO 8000 Standard Requirement: Provenance

Provenance is the history of ownership:

1. At the data element level
2. When was it extracted from the database
3. Who is the owner of the database

ISO 8000 - Part 120

(9) See PiLog MDRM Compliance

(8) ISO 8000 Standard Requirement: Accuracy

Accuracy is measured as follows:

1. At the data element level
2. Who makes the claim to accuracy (Business Identifier)
3. If the accuracy is covered by a wa

ISO 8000 - Part 130

Complete

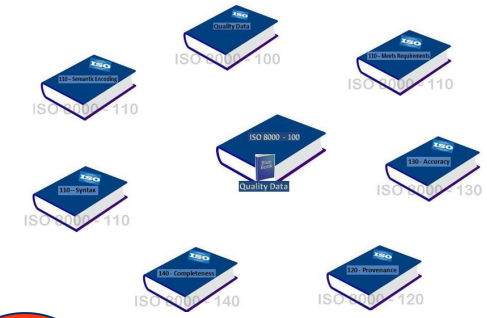
with the following elements in place

(9) ISO 8000 Standard Requirement: Completeness

Completeness is measured as follows:

1. At the data element level
2. Who makes the claim to completeness

ISO 8000 - Part 140



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> *"If you are working on something exciting that you really care about, you don't have to be pushed. The vision pulls you." ~ Steve Jobs*