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ADS is the Premier Trade Organisation for companies in the UK Aerospace, Defence, Security and Space Sectors.

A guide to first time implementation of S1000D

or

How business rules guide the implementation of S1000D

Name of presenter: Charles C Cartwright
Rank/title of presenter: Director S1000D
Company/organization: American Data Solutions

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To Begin

- Read the specification
- Re-read the specification
- Obtain training
- Start to create your Business Rules - Document the decisions as you make them

Critical tasks

1. Check with your customer
2. Determine Information sets
3. Select Data Module types
4. Establish a Data Module Code
5. Model identification code registration
6. Define the SNS
7. Define the information and learn code
8. Establish Information control numbers
9. Examine the optional elements and attributes
10. Don't forget the BREX
11. Complete the business rules

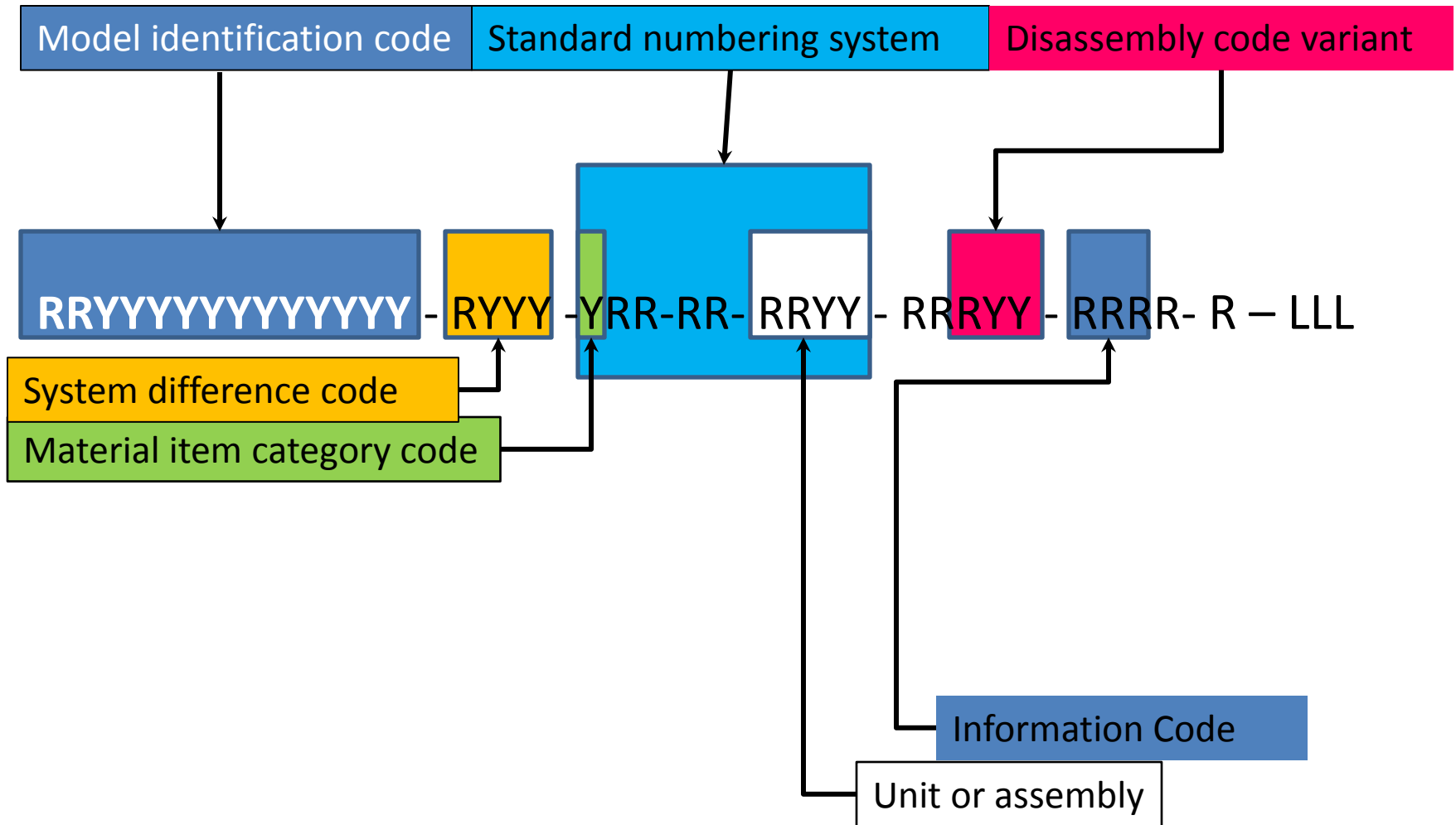
Check with your customer

- Does your customer have Business rules?
 - If they have Business rules
 - some decisions have been made for you

Determine information sets

- Common information sets, refer to Chap 5.2.1
- Air specific information sets, refer to Chap 5.2.2
- Land/Sea specific information, refer to Chap 5.2.3

Data Module Code - What to worry about



Data Module Code - What to worry about

- The model identification code - select something meaningful. Try to avoid gobbledygook (unless it is a classified program).
- The system difference code - decide on the length one character seems too few (only 34 options) and 4 seems extreme (1,336,336 options) but 2 characters seems just right (1156 options)
- The material item category code – decide if it will be useful to you.
- The unit or assembly- decide on the length. I have been on several programs where 2 characters became a mess, with a mix of alphabetic and numeric characters. I like numbers for this item so I like 4 numeric characters
- The disassembly code variant - decide on the length. I like 2 (same arguments as system difference codes)
- The standard numbering system and the information codes will be addressed later.

Model identification code registration

- Must be registered with NPSA (previously NAMSA) (North Atlantic Treaty Organization (NATO) Support Agency)
- Current listing of Model Identification codes can be found at
 - <http://www.nspa.nato.int/PDF/Log/S2000M/S2000M%20MOI%20codes.pdf>
- For new code allocations, please contact spec2000m@nspa.nato.int
- Send an email ,
 - stating the product for which the code is required,
 - a very short description of it and
 - indicating any preference for the code.
 - Please include the details of a contact point
 - (name,
 - title,
 - organization,
 - postal address,
 - telephone,
 - facsimile,
 - e-mail).

Standard numbering systems

- S1000D
 - contains a number of SNS that are maintained by the S1000D community
 - some example SNS

Standard numbering system (SNS)

- Maintained SNS
 - Are subject to CPF action
 - numeric generic SNS is provided for common system information
 - alphanumeric SNS specifically for
 - air,
 - land,
 - sea,
 - support and
 - training,
 - tactical missiles,
 - communications,
 - technical publications and
 - ordnance

The generic SNS

- 00 Product, General
- 01 Not available for projects
- 02 Available for projects
- 03 Available for projects
- 04 Worthiness (fit for purpose) limitations
- 05 Scheduled/unscheduled maintenance
- 06 Dimensions and areas
- 07 Lifting, shoring, recovering and transporting
- 08 Leveling and weighing
- 09 Handling and maneuvering
- 10 Parking, mooring, storing and return to service
- 11 Placards and markings
- 12 Servicing
- 13 Available for projects
- 14 Product loading and offloading
- 15 Crew information
- 16 Change of role
- 17 Available for projects
- 18 Vibration and noise analysis and attenuation
- 19 Available for projects

The SNS

- You can save a lot of time and effort by using
 - An SNS already in use by your customer (for a similar project)
 - Then
 - Delete systems you don't have or need
 - Add the system you need but which are not in the chosen SNS
- If your customer has no SNS you can use as a starting point,
 - Try using the generic SNS with
 - a maintained SNS
 - Then
 - Delete systems you don't have or need
 - Add the system you need but which are not in the chosen SNS
- If none of the maintained system are similar to your project,
 - consider using an example system
 - Again
 - Delete systems you don't have or need
 - Add the system you need but which are not in the chosen SNS
- If all else fails, begin with the generic SNS and build your own

Info and learn codes

- Review the information and learn codes
 - You may need to remove some because they are not required in your project
- You may need to modify some of the infoNames to better suit your project (“provided the sense of the information code is maintained.”)
- You may need to consider your customer requirements and directives (from their business rules) related to information and learn codes. (especially true for US Military programs)

Information control number

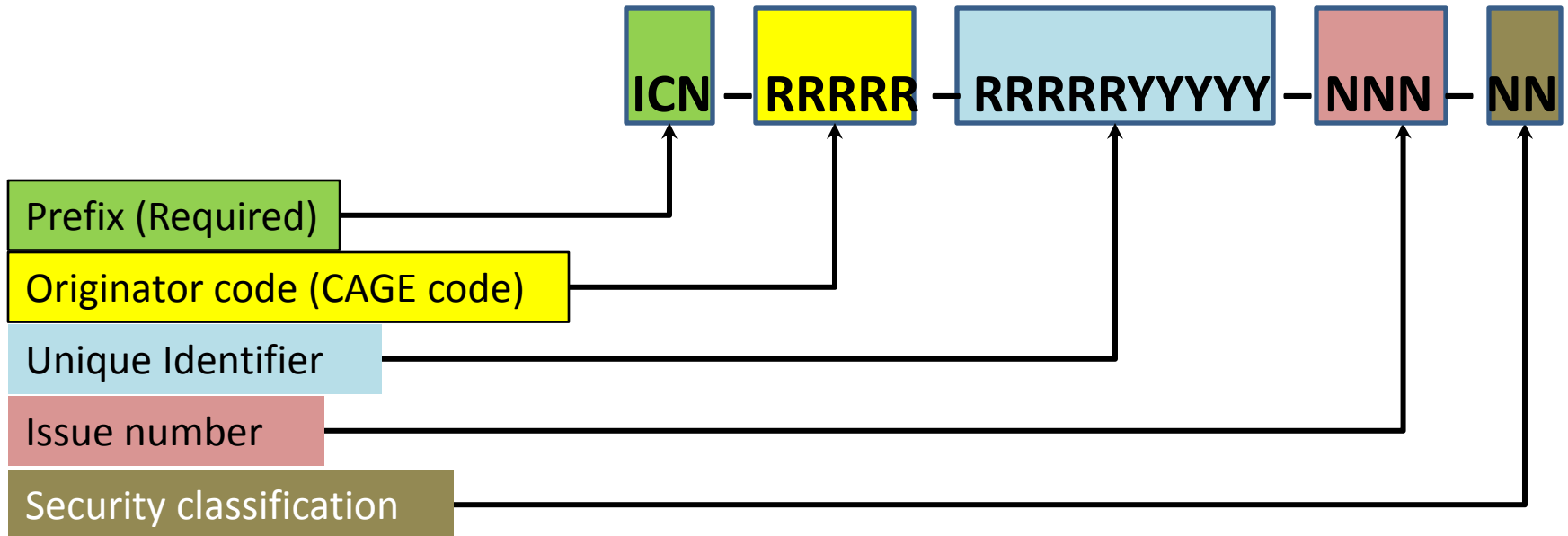
Either

- company/organization code - CAGE code based

or

- project code - model identification code based

Information control number – CAGE code based



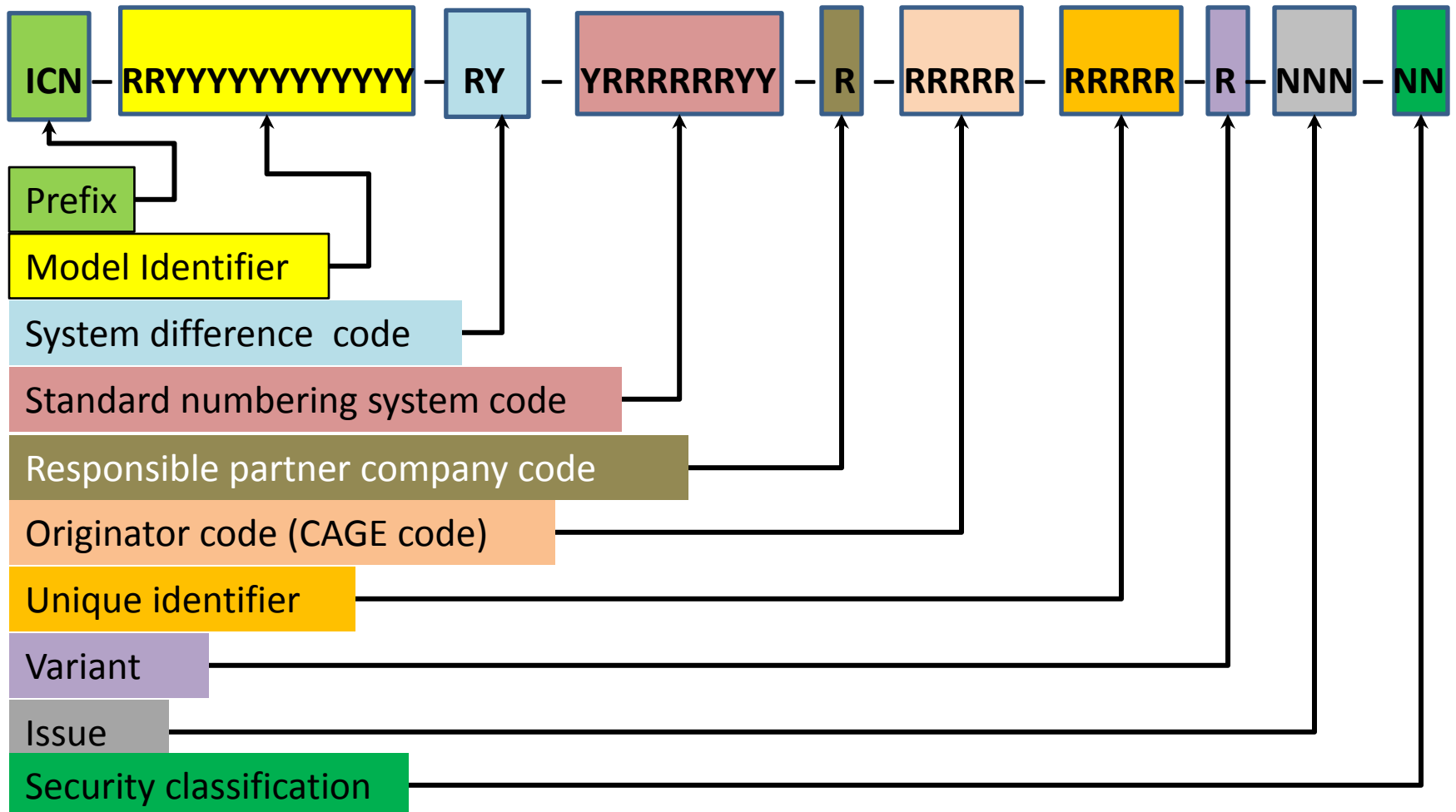
- N** - required numeric
- R** - required alphanumeric
- Y** – optional alphanumeric

Information control number – Unique identifier

Number of characters in the unique identifier	Maximum number of graphics Using numeric characters only	Maximum number of graphics Using alphanumeric characters (34 characters)	
5	100,000	45,435,424	45 million
6	1,000,000	1,544,804,416	1 billion
7	10,000,000	52,523,350,144	52 billion
8	100,000,000	1,785,793,904,896	1 trillion
9	1,000,000,000	60,716,992,766,464	60 trillion
10	10,000,000,000	2,064,377,754,059,780	2 quadrillion

If you choose this Information control number method, select a 5 character unique alphanumeric identifier. If you really think you will produce more than 45 million graphics, pick 6 characters.

Information control number - Model identification code based



Information control number

- Choose the Model based system
 - It uses the SNS and may make it easier for Authors to find needed graphics (It does make for a more complicated numbering scheme)

Optional Schema Elements and Attributes

- The schema have optional elements and attributes
- Which optional elements and attribute will you require or forbid?
 - 1306 elements
 - 439 attributes
- This is not an xml only set of questions.
 - Change mark – better make if required if you want to identify changes in presentations.
 - techStandard - authorized technical standard and associated data describing the information basis used to write the data module.
 - <secondVerification> - allows recording of type of second verification

Don't forget the BREX- *The default S1000D BREX*

- The S1000D default BREX is an excellent start for a project BREX
- Every data module must conform to its BREX
- A BREX checker used for this function
- It compares the content of the Data Module with the allowed values in the BREX
- The BREX checker cannot enforce rules that are not contained in the BREX. Therefore make the BREX as strong as possible. The default BREX is too open. It allows every option the specification allows. The specification contains 552 business rule decisions where the project is to choose an option. While not all of these can be encoded in the BREX many can. Make your decision and then enforce your choices. There are many, many optional elements and attributes. You don't want all of them. Use the BREX to enforce the optional elements and attribute values you want made mandatory and forbid the options you do not want.

The Project BREX data module

- The project BREX should for instance
 - Reflect the model identifier
 - Reflect the infoCodes to be used in the project
 - Reflect the SNS to be used by the project
 - Reflect the optional elements and attributes to be required or forbidden
 - Reflect the configurable attribute values to be used in the project
 - And so, so much more
- A strong set of Business rules that are reflected in the BREX is the most critical components of a successful S1000D project

Complete the business rules

- Business rules are critical to the S1000D process
- If you begin before the business rules are defined; you will be doing things over.
- If you have completed your business rules you have completed everything needed to successfully implement an S1000D program.

Review of the Business rule decisions made

- Information sets to be used - **BRDP-S1- 00004**
- Schemas to be used - **BRDP-S1- 00006**
- Data module coding strategy - **BRDP-S1- 00331**
- The model identification code - **BRDP-S1-00332** and **BRDP-S1-00333**
- The system difference code - **BRDP-S1-00334**
- The material item category code – **BRDP-S1-00337**
- The unit or assembly- **BRDP-S1-00338**
- The disassembly code variant - **BRDP-S1-00342**
- Product SNS structure - **BRDP-S1- 00336**
- Rules for the information names - **BRDP-S1- 00051**
- Use of CAGE code and/or model identification code based ICN - **BRDP-S1-00344**
- Use of optional elements and attributes - **BRDP-S1- 00007**

Complete the business rules

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Danke sehr

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Dank

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Grazie

Thank you

for your attention!

Questions?

Charles C Cartwright
Director S1000D
American Data Solutions
charlie.cartwright@mddv.com
+1 (404) 401.6030

