Build 2c Phase 1 Test (v07) RFA List

RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_001	Raugh	SBNUMD01: No instructions for null values	I could find no instructions for how indicate that a required value is null, and had to search through XML Schema code even to determine which values might be nillable.	1 - Update DPH/Stds Ref to provide instructions on how to indicate that a required value is null. 2 - Add the nil reason attribute to the IM and DD documents.	IMPLEMENTED			Add Symbolic_Literals_Nil_Reason_List as an attribute to the DD and IM documents.	Added the class Symbolic_Literals_PDS and attribute nil_reason to the model. DPH updated.
RFA_Build2c_Beta_002	Raugh	SBNUMD02: No data_regime value for Shape Models	There is no <data_regime> standard value that pertains to shape models or digital elevation models.	Have a Node expert provide an appropriate permissible value and meaning.	POSTPONED			This RFA has been tabled until after Build 2c. The four attributes of primary_result_description, data_regime, purpose,	
RFA_Build2c_Beta_003	Raugh	SBNUMD03: Missing standard values in Investigation_Area	There are no standard values defined for the required <reference_type> in the required <Internal_Reference> of the required <Investigation_Area>.	Fix software bug.	IMPLEMENTED		"has_investigation" is specificied as the required <reference_type> in the required <Internal_Reference> of the	Fix the bug in the IM and DD document generation software.	Fixed the bug in the IM and DD document generation software. An additional type of schematron assert statement needed to be
RFA_Build2c_Beta_004	Raugh	SBNUMD04: Fixed-width fields not required to declare length	The <field_length> attribute is optional for fields in character records. If this is intentional it imposes an additional requirement on labels that every single byte in a character record be explicitly defined (a sharp departure from PDS3). In order to	This seems to be a typo. The IM update log includes a request to make field_length in field_delimited optional. - Make field_length required in field_character and field_binary. Needs DDWG confirmation.	IMPLEMENTED		DDWG confirmed the recommended change.		Made field_length required in field_character and field_binary.
RFA_Build2c_Beta_005	Raugh	SBNUMD05: Unit of measure not required	In (XML) elements that have a "unit" (XML) attribute, this attribute is not required. For example: field_location, offset.	Add the XML schema construct to make an XML attribute required. <xs:attribute name="unit" type="pds:UnitOfMeasure_Storage" use="required"/>	IMPLEMENTED		DDWG confirmed the recommended change.		Added the XML schema construct to make an attribute required. use="required"
RFA_Build2c_Beta_006	Raugh	SBNUMD06: Character Record Delimiters	Record delimiters are a field in a record, and thus if they are going to be explicitly defined they need to be defined as a property of Record_Character, not of the table containing it. - Further, if a specific record delimiter is not going to be required, then	Make record_delimiter required in Table_Character.	IMPLEMENTED		DDWG confirmed the recommended change. DDWG also voted in favor of leaving record_delimiter in table_character as opposed		Made record_delimiter required in Table_Character.
RFA_Build2c_Beta_007	Raugh	SBNUMD07: Bad error message for product_class	The schematron file produces this message if the <product_class> in the <Identification_Area> does not have a valid value: The attribute reference_type must be set to one of the following values	Fix schematron test and message for product_class.	IMPLEMENTED				Rewrote the schematron statement to test that the value of the attribute product_class is equivalent to the name of the product
RFA_Build2c_Beta_008	Raugh	SBNUMD08: No field_format Conventions	No syntax is given or any conventional format cited for creating values for the <field_format> attributes in tables.	Needs DDWG decision. AI_101021:5:JSH Field_Format - Added comments on printf and fortran to definition. - Comments were removed during DD Scrub.	IMPLEMENTED		DDWG vote decided that the printf format would be used. Action items were written to have the Stds Ref and DPH updated.		Updated field_format description to state that the printf format is to be used.

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RFA_Build2c_Beta_009	Raugh	SBNUMD09: reference_type values not user-friendly	The <reference_type> attribute has values like "has_investigation", which is used to indicate that a given reference describes the investigation named in a related attribute. This is more of an association type than a reference type, and the actual association exists at a higher level than the reference_type attribute itself. Consequently, users are unlikely to be familiar enough with the underlying jargon to be able to quickly select the right value from the enumerated value list, and end-users are more likely to find the values confusing than informative.	rewrite the reference_type values to make them unique, indicate direction, and provide enough context so that the relationship and the involved classes are clear.	IMPLEMENTED		Association An attribute that establishes a unidirectional relationship between two classes. For example, a table has records; 'has record' is the relationship between one entity (Table_Base, the simplest table in PDS4 nomenclature) and another (Table_Record). - Reference -> The Internal_Reference class is used to cross-reference other products in the PDS registry system. (An implemenation of a relationship.)		Rewrote the reference_type values to make them unique, indicate direction, and provide enough context so that the relationship and the involved classes are clear.
RFA_Build2c_Beta_010	Raugh	SBNUMD10: Missing namespace in PDS Schematron File	Many of the rules in the PDS Schematron file have a context that does not include the "pds:" namespace prefix on all parts of the XML path. Consequently, these constraints are not checked when the file is used in validating a PDS label.	Add the namespace to the rules in the schematrom file generated for enumerated lists.	IMPLEMENTED				Appended the class namespace to the class names in the rules in the schematrom file generated for enumerated lists.
RFA_Build2c_Beta_011	Raugh	SBNUMD11: Inappropriate record_delimiter constraint in Schematron file	The PDS master schema does not require record_delimiter as an attribute of Table_Character. However, the Schematron file requires it to be present with one of several specific values. Simple attribute inclusion requirements should be in the model and thus in the master schema, NOT the Schematron file.	Make record_delimiter required in Table_Character. - See RFA_Build2c_Beta_006.	IMPLEMENTED				Made record_delimiter required in Table_Character.
RFA_Build2c_Beta_012	Simpson	RS01 - Value meanings for Investigation type permissible values.	Class Investigation has attribute type which has 4 undefined, enumerated values. I recommend something like the following. Some tuning would be desirable to make sure the wording and examples are correct.	Add the suggested value meanings.	IMPLEMENTED				Added the suggested value meanings.
RFA_Build2c_Beta_013	Simpson	RS02 - DPH update for attribute ordering. Revision_id in Document Description.	0.7.0.0.j appears to allow <revision_id> after <publication_date> in Document_Description. But oXygen says revision_id is not allowed in that position. Using http://pds.jpl.nasa.gov/repository/pds4/examples/dph_examples_7j/dph_example_archive_VG2PLS/schemas/PDS4_OPS_0700j.xsd	The "official" order for attributes is reflected in the schemas. However this order is not reflected in the IM or the DD. The attribute <revision_id> should be first.	CLOSED		A note has been made to use the official order in both the IM and the DD.		No change to model.
RFA_Build2c_Beta_014	Simpson	RS03 - Default unit for File_Size	No default unit for file_size is specified. Adding an XML attribute to the tag <file_size unit="byte"> generates an error in oXygen. Need to either set a default unit or allow inclusion of XML attribute.	Add Unit of Measure Type: UnitOfMeasure_Storage to file_size with specified_unit_id=byte.	IMPLEMENTED				Added Unit of Measure Type: UnitOfMeasure_Storage to file_size with specified_unit_id=byte.
RFA_Build2c_Beta_015	Simpson	RS04 - Modification_Detail cardinality	Modification_Detail has cardinality 1 when used in Modification_History. But each Modification_Detail has a specific modification_date, the first of which documents when the product was first registered. But if cardinality = 1, then there can be no further modifications documented. Need to change cardinality to 1.. in Modification_History OR make clear in Class Description for Modification_Detail that it documents only the most recent modification/registration.	This seems to be typo. Make the cardinality of modification_detail 1..*	IMPLEMENTED				Made the cardinality of modification_detail 1..*

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RFA_Build2c_Beta_016	Raugh	SBNUMD12: Schematron File typos preventing validation	The schematron file PDS4_PDS_0700j.sch omits the "pds:" namspace prefix from a number of rule contexts, for example, "Array_2D_Image". These rules will not validate against things in the "pds:" namespace, even if there is a coincidence in element name.	Fixed. See RFA_Build2c_Beta_010/SBNUMD10	IMPLEMENTED				See RFA_Build2c_Beta_010/SBNUMD10
RFA_Build2c_Beta_017	Raugh	SBNUMD13: Standard Value Case	Standard values that are mimicking PDS3 values, for better or worse, are in all-caps, and frequently use gratuitous underscores that are not necessary in XML. For example, the values for <encoding_type> are BINARY or CHARACTER. The value for axis order is LAST_INDEX_FASTEST. Other standard value lists created for PDS4 are in mixed case. The sudden use of all uppercase seems like it should be indicating some special condition, but as far as I can tell it is not.	PDS should not force the user to force upper, lower, or camel case.	IMPLEMENTED		A set of recommendations has been distributed for standard value cases.	Modify selected standard values that are currently upper case.	Modified selected standard values that are currently upper case. Examples DOWN', 'UP', 'ISIS_HISTORY' ENCAPSULATED_POSTSCRIPT, MICROSOFT_WORD, POSTSCRIPT, RICH_TEXT - 'EXPONENTIAL', 'LINEAR', 'LOGARITHMIC',
RFA_Build2c_Beta_018	Raugh	SBNUMD14: Data Dictionary Output Error?	The listing in the abridged data dictionary made available for this testing conflates the entries for the Display_2D_Image and Element_Array classes under the Array_2D_Image class listing. The result is that it looks at first glance like there are no attributes in the former; but on closer inspection everything is listed as being attributes of the latter.	Fix software bug.	IMPLEMENTED				Software was fixed.
RFA_Build2c_Beta_019	Raugh	SBNUMD15: Schematron error: Axis_Array check	The schematron file refers to a "name" attribute in the Axis_Array of an Array_2D_Image, and attempts to constrain it to "LINE" or "SAMPLE". There is no such attribute in Axis_Array – the attribute is "axis_name".	Change pds:name to pds:axis_name.	IMPLEMENTED				Changed pds:name to pds:axis_name.
RFA_Build2c_Beta_020	Raugh	SBNUMD16: Document_Format placement and content	The Document_Format class should be the first class under Document_Format_Set, not the last, since it should contain the overarching descriptive information. The format_type attribute does not have useful values for this class, since they are restricted to values that either either refer to a single file or are meaningless. - For example, rather than "HTML", which is a single file format, an appropriate value would be something like "HTML tree" or "HTML website". For "TEXT", something like "UTF-8 text with separate graphics files" would be a better value. Better, for any document contained in a single file, a value of "Single File Document" would be more useful than any form of repeated file format information.	Change ordering to place Document_Format before Document_File in Document_Format_Set. - Change permissible values for format_type to multiple_file and single_file.	IMPLEMENTED		History: AI_100909:3:JSH - Update electronic DD based on review team feedback. - update document_format.format_type to reflect the allowed formats. (html, pdf_a, and text); AI_091112:8:JSH - Added values {ADOBE_PDF, ENCAPSULATED_POSTSCRIPT, GIF, HTML, JPG, LATEX, MICROSOFT_WORD, PNG, POSTSCRIPT, RICH_TEXT, TEXT, TIFF} to the format_type enumeration.		Changed ordering to place Document_Format before Document_File in Document_Format_Set. - Changed permissible values for format_type to multiple_file and single_file.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_021	Raugh	SBNUMD17: Document_Description class placement and content	The Document_Description class should precede the Document_Format_Set(s) and related details. - The Document_Description class seems to duplicate everything in the Citation_Information class in the Identification_Area. Is there a more efficient way to achieve the same ends without duplication in content?	1) Fix ordering code to place Document_Description before Document_Format_Set. 2) Suggest that Document_Description be shortened to Document	IMPLEMENTED		Citation_Information provides information primarily about the product. Document_Description provides information specifically about the data object, the actual document. First question, are the requirements the same. The requirements for the first are to provide a citation where the requirements for the second are to describe the document, presumably in more detail. Suggest that Document_Description be changed to Document to be consistent with other description objects.		Fixed ordering code to place Document_Description before Document_Format_Set.
RFA_Build2c_Beta_022	Raugh	SBNUMD18: No format instructions for author_list, editor_list	Nowhere could I find instructions for how to format author_list or editor_list values. Since this is part of the interface to the ADS database, it's rather important that these be formatted correctly.	Add instructions for how to format author_list and editor_list to the DPH and Standards Reference.	CLOSED				No change to model.
RFA_Build2c_Beta_023	Raugh	SBNUMD19: Document_File external_standard_id values	The external_standard_id value list includes the value "TEXT". This is not an external standard in any way, shape, or form. More importantly, if we are going to support the UTF-8 standard, this is exactly where we should be explicitly stating it.	Replace "TEXT" with ASCII and UTF-8. Add the optional attribute external_standard_version_id	IMPLEMENTED		History: o AI_100902:7:JSH - - update Product_Document; delete encoding_type; it only existed in Document_Part and function is currently handled by external_standard_id		Replaced "TEXT" with ASCII and UTF-8. Added the optional attribute external_standard_version_id
RFA_Build2c_Beta_024	Raugh	SBNUMD20: Document_File encoding_type is redundant	The encoding_type attribute in Document_File is at best redundant, and at worst a lot of trouble to include and verify for no gain in functionality. The external_standard_id is required to be present and gives far more specific detail about file structure than the strings "CHARACTER" and "BINARY" ever could.	Remove the attribute encoding type from document_file.	IMPLEMENTED				Removed the attribute encoding type from document_file.
RFA_Build2c_Beta_025	Raugh	SBNUMD21: MICROSOFT_WORD is an inappropriate standard value	The value of MICROSOFT_WORD for the external_standard_id in a Document_file is not an appropriate value for archival purposes. MS Office formats are not interchangeable, and there's no reason to believe they will become so in future, or that MicroSoft will continue to support legacy file formats indefinitely. The specific MS encoding values should be required.	Add external_standard_version_id.	IMPLEMENTED				Added external_standard_version_id. - See RFA_Build2c_Beta_023
RFA_Build2c_Beta_026	Raugh	SBNUMD22: No format_type value for MS Office files	None of the available values for format_type in Document_Format are appropriate for MS Word-type files. (See also SBNUMD16.)	Change permissible values for format_type to multiple_file and single_file.	IMPLEMENTED				See RFA_Build2c_Beta_020.

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RFA_Build2c_Beta_027	Raugh	SBNUMD23: Schematron referencing non-existent "logical_identifier" attribute, and failure to validate and essential ID requirement	The schematron file PDS4_PDS_0700j.sch repeatedly attempts to make assertions against a non-existent node "pds:logical_identifier". These references need to be replaced with multiple references to the actual attributes "pds:lid_reference" and "pds:lidvid_reference" - an excellent example of the multiplication in programming logic required by conflating version_id with the logical id.

In addition, I do not actually see any tests the ensure that either lid_reference or lidvid_reference, but not both, is always present in, for example, the Internal_Reference classes. | Replace "pds:logical_identifier" with pds:lid_reference" and "pds:lidvid_reference. - The XML Schema construct "choice" is use to ensure that either lid_reference or lidvid_reference, but not both, is always present in the two existing cases. | IMPLEMENTED | | | | Global rule now validates lid_reference and lidvid_reference. - |
| RFA_Build2c_Beta_028 | Raugh | SBNUMD24: IM contains two Header classes with confused parameters | The IM contains two header classes: Header and Header_Binary. These names are misleading. Both types of headers may contain binary data. Header_Binary is restricted to binary data, but this is problematic.
The structural difference between the two is that the first is a parsable byte stream, while the second in an encoded byte stream. Both types of byte streams can come in either character or binary form. (BINHEX files, for example, are encoded, but they are encoded such that the resulting bytes are all printable ASCII.)
If the intention is to restrict both encoding and parsing rules, then four classes are called for. If the intention is to restrict only by parsing rules, then the classes should be something like Header and Header_Encoded. | change the name of header_binary to header_encoded. Standards reference will be updated to explain the difference between parsable_byte_stream and encoded_binary. | IMPLEMENTED | | | | Changed the name of header_binary to header_encoded. |
| RFA_Build2c_Beta_029 | Raugh | SBNUMD25: ASCII_Integer and related data types still constrained inappropriately | The ASCII_Integer and related ASCII_* data types are still being constrained to the maximum values available in standard longword representations. One of the main reasons for using ASCII values to represent numerics is to avoid the limitations of hardware restrictions for representing numeric values. It is ridiculous to allow the ASCII_Real data type to vary over (-INF, +INF) and still constrain integers to a tiny range – especially in view of the fact that those integer types will be used to represent byte counts and offsets in file that could easily exceed limits placed on these data types. We already have data files in the PDS3 system that could not be labeled because of these constraints. | Identify and fix the remaining instances where extrema values of min and max values are not being converted or handled properly. For example remove instances of <xs:maxInclusive value="2147483647"/> in the generated XML schema files. | IMPLEMENTED | | | | Fixed the remaining instances where extrema values of min and max values are not being converted or handled properly in the schema files. For example removed instances of <xs:maxInclusive value="2147483647"/> in the generated XML schema files. |

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RFA_Build2c_Beta_030	Slavney	GEOWU_01 - Documentation	The tasks seemed much more difficult than they should have been due to the erratic documentation -- many documents were incomplete, or obsolete, or missing, or were being updated during the test, and as a whole were disorganized. I found information by accident or by digging in likely places. It took more perseverance than the typical data provider will have.	GEO Recommendation: Fix the documentation.	PENDING		RFAs subsumed by this RFA. RFA_Build2a_041 RFA_Build2a_046 RFA_Build2a_080 RFA_Build2a_043 RFA_Build2c_Beta_008 RFA_Build2c_Beta_022 RFA_Build2c_Beta_028 RFA_Build2c_Beta_039 RFA_Build2c_Beta_060 RFA_Build2c_Beta_061 RFA_Build2c_Beta_062 RFA_Build2c_Beta_063 RFA_Build2c_Beta_064 RFA_Build2c_Beta_065 RFA_Build2c_Beta_068 RFA_Build2c_Beta_069 RFA_Build2c_Beta_070 RFA_Build2c_Beta_071 RFA_Build2c_Beta_072 RFA_Build2c_Beta_074 RFA_Build2c_Beta_080 RFA_Build2c_Beta_089 RFA_Build2c_Beta_112 RFA_Build2c_Beta_113		
RFA_Build2c_Beta_031	Slavney	GEOWU_02 - Planet_Day_Number	There is no data dictionary element corresponding to the PDS3 keyword PLANET_DAY_NUMBER (i.e. sol number). There was such an element in the previous test; what happened to it?	GEO Recommendation: Restore PLANET_DAY_NUMBER to the dictionary.	CLOSED				DDWG agreed that Planet_Day_Number would be included in an imaging discipline dictionary.
RFA_Build2c_Beta_032	Slavney	GEOWU_03 - Header Issue	When inserted into a label by Oxygen, the default File_Area_Observational element comes with a File attribute and a Header attribute. It's valid that way, although useless. It's not obvious that you are supposed to add another attribute corresponding to the type of data product. -	GEO Recommendation: Do not make the Header attribute present by default. This will render the File_Area_Observational element invalid by default, forcing the user to choose a type of data product to add to it.	CLOSED		EN found two other cases in which the Oxygen editor did not show all the available attributes for an element (as reported above), but in these cases I was able to enter them by hand without getting a validation error. They were the attribute field_number in the Field_Binary element, and the attribute description in the Header element.		EN have emailed Susie to ask if she explicitly specified that O2 include all optional attributes / classes when the sample label was generated by O2. DPH was updated with additional instructions on the use of Oxygen.
RFA_Build2c_Beta_033	Slavney	GEOWU_04 - XML Catalog File	I do not understand how to use an XML Catalog File to make my schema portable. I followed the directions for creating a catalog file, but I don't know what to put in my schema or label to make it work.	GEO Recommendation: Fix the documentation, put it all in one place, and use concrete examples. - Determine Best Practice and document. Paul	IMPLEMENTED			The best practice will be determined and then documented in the DPH and/or on the WIKI.	Instructions on how to create and use XML catalog files have been added to the DPH.
RFA_Build2c_Beta_034	Slavney	GEOWU_05 - Schematron Error Message problem - Product_Class	In schematron PDS4_PDS_0700j.sch, line 60, I think the error message should say "The attribute product_class must be set to one of the following values..." instead of "The attribute reference type must be set...". This is probably the same as RFA_Build2c_Beta_007 already reported by Anne.	GEO Recommendation: Fix the error message.	IMPLEMENTED				See RFA_Build2c_Beta_007

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RFA_Build2c_Beta_035	Slavney	GEOWU_06 - Schematron Test - lid_reference	In schematron PDS4_PDS_0700j.sch, I think lines 90-91 should be testing the attribute lid_reference rather than logical_identifier.	GEO Recommendation: Fix the test and the accompanying error message.	IMPLEMENTED				See RFA_Build2c_Beta_027.
RFA_Build2c_Beta_036	Slavney	GEOWU_07 - Oxygen and attribute insertion.	Master schema PDS4_PDS_0700j.xsd says an Array_2D_Image product can have an Object Statistics element that contains these sub-elements: maximum, minimum, mean, standard_deviation, bit_mask, median, md5_checksum, maximum_scaled_value, minimum_scaled_value, and description. But when using Oxygen I am not able to insert all these elements into my label. The only ones available (in the Oxygen Outline pane when you left-click on Object Statistics) are bit_mask, maximum_scaled_value, minimum_scaled_value, and description. When I try to put in one of the other ones by hand, there's a validation error.	GEO Recommendation: Make Oxygen display the complete list of attributes from the schema. - Oxygen issues.	CLOSED		EN found two other cases in which the Oxygen editor did not show all the available attributes for an element (as reported above), but in these cases I was able to enter them by hand without getting a validation error. They were the attribute field_number in the Field_Binary element, and the attribute description in the Header element.		EN has emailed Susie to ask if she explicitly specified that O2 include all optional attributes / classes when the sample label was generated by O2. DPH was updated with additional instructions on the use of Oxygen.
RFA_Build2c_Beta_037	Slavney	GEOWU_08 - Oxygen and attribute insertion.	I found two other cases in which the Oxygen editor did not show all the available attributes for an element (as reported above), but in these cases I was able to enter them by hand without getting a validation error. They were the attribute field_number in the Field_Binary element, and the attribute description in the Header element.	GEO Recommendation: Make Oxygen display the complete list of attributes from the schema.	CLOSED				Specify that O2 include all optional attributes / classes when the sample label was generated by O2.
RFA_Build2c_Beta_038	Slavney	GEOWU_09 - Schematron Error message - Line and Sample	I don't understand this schematron validation error for an Array_2D_Image label: "pds:name = ('LINE','SAMPLE')) [assert]" This error appears twice. There is no accompanying error message. I think I am using the LINE and SAMPLE axis names correctly in my label. The message comes from lines 26-36 in PDS4-PDS_0700j.sch.	GEO Recommendation: Make the error message say what the error is. - Add error messages.	IMPLEMENTED				See RFA_Build2c_Beta_019. Added additional error messages.
RFA_Build2c_Beta_039	Slavney	GEOWU_10 - Axis_Array Sequence_Number documetation.	The Axis_Array element in Array_2D_Image includes the attribute sequence_number. I put sequence number 1 for LINE and 2 for SAMPLE, but I don't know how to tell whether that is correct. Where is this documented?	GEO Recommendation: Explain this in the definition for sequence_number and in some documentation relevant to describing image data products.	CLOSED			Add exlanation to Stds Ref	An AI was taken to update the Standards Reference on how Axis_Array sequence numbers are to be assigned.
RFA_Build2c_Beta_040	Slavney	GEOWU_11 - Observaing_System and its options - How to validate.	From Ed Guinness I learned that the Observing_System element should have a spacecraft component and an instrument component. I had included only an instrument component, and my Observing System element appeared to be valid. How should I have known (i.e. where is it documented) to include both spacecraft and instrument components?	GEO Recommendation: Add a validation test (in the schematron?) to ensure both components are present. Explain this in some documentation relevant to describing the observing system.	CLOSED				Write the necessary rules in mission schematron file.

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RFA_Build2c_Beta_041	Slavney	GEOWU_12 - Order of apperance in label.	I see that the order of appearance of attributes in an element is prescribed. It would be more convenient if the order didn't matter. For example, for a data file that contains a header and an image in that order, it would make sense to list them in the File_Area_Observational element in the same order, but it's not allowed. That specific example was in an RFA submitted by Todd in the previous test. It's item 34 in pds4-rfa-list-20120122.xls, and it is marked IMPLEMENTED. Evidently it is not really implemented.	GEO Recommendation: Change the schema so that the order of attributes in ANY element is not prescribed unless there is a good reason to do so for that element.	CLOSED		The DDWG agreed that allowing arbitrary order has to be an exception since by default order counts in XML schema.		The current XML Schema implementation allows the data objects in both product_observational and product_browse to be in any order. No change to the model.
RFA_Build2c_Beta_042	Roybal	ATMOS01 - Date Time Patterns.	The patterns for various time data types are failing. ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_YMD, ASCII_Date_YMD	Fix patterns. Also make XMLLINT the standard parser for validating pattern regular expresses. Tests show it to be the most strict.	IMPLEMENTED		Validate patterns with Xerces. For example change (-|)[0-9]{4} to (-)?[0-9]{4}		Fixed patterns for ASCII_Date_DOY, ASCII_Date_Time_DOY, ASCII_Date_Time_YMD, ASCII_Date_YMD
RFA_Build2c_Beta_043	Simpson	RS - Data Regime	Address Data Regime in terms of the energy-mass continuum - that is, recognize that mass and energy are somewhat interchangeable and that different disciplines have preferred vocabularies. But almost everyone should be able to fit into a "regime" that includes mass, energy, and wavelength/frequency.	RS Recommendation: See email attachment for message on 4/20 from D. Simpson, Re: Primary_Result_Description attributes - FW: PDS4 Version 0512B	IMPLEMENTED		Node experts need to propose additional permissible values, as needed.	Replace permissible values for data_regime with orginal taxonomy and with "::" as delimiter.	Replaced permissible values for data_regime with orginal taxonomy and with "::" as delimiter.
RFA_Build2c_Beta_044	Simpson	RS - Reduction_Level	PDS adopted a policy specifically for PDS 2010 defining "processing levels" on 2010-12-06. Having an attribute reduction_level confuses matters (at best) and subverts MC's (unanimous) intent (at worst).		IMPLEMENTED			The DDWG decided to use the MC values and values meanings for reduction_level.	Modified the persmissible values for reduction level to use the MC approved values and values meanings.
RFA_Build2c_Beta_045	Simpson	RS - Glossary	Glossary Update	Apply three pages of new Glossary terms requested by Ron and Elizabeth (pages 8-10). See email attachement for message 4/18 from D. Simpson, New PDS4 Glossary Terms	PENDING				
RFA_Build2c_Beta_046	Simpson	RS - Record Delimiter for Inventory and Delivery_Manifest	Table_Character has an optional record_delimiter. Inventory and Delivery_Manifest don't even have the option.	Make Inventory and Delivery Manifest subclasses of Table Character; Leave Uniformly_Sampled as optional. - . There are a lot of Table_Character possibilities that are not uniformly sampled (or for which 'sampling' isn't even a relevant concept -- for example, tables of asteroid properties). Data Providers who WANT to use Uniformly_Sampled can include it in their definitions; everyone else can ignore it. If you start messing with Uniformly_Sampled under Table_Character, note that it also appears under Table_Binary and Table_Delimited. You'd probably want to make the same kinds of changes there, and suddenly our lines-of-code metric is exploding again.	IMPLEMENTED				Made Inventory and Delivery Manifest subclasses of Table Character; Left Uniformly_Sampled as optional.
RFA_Build2c_Beta_047	Simpson	RS - Midnight	Should midnight be 00:00:00, 24:00:00, or both?	RS Recommendation: See email attachment for message on 4/12 from D. Simpson, Midnight	PENDING				

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_048	Mafi	PPI 01- Make Table_Delimited an extension of Table_Base	While there was an early decision to define delimited tables as parsable byte streams, the elements required to describe Table_Delimited align better with the current definition of Table_Base than the do with Parsable_Byte_Stream. The structure of these two classes is as follows: ---Table_Delimited requires <records> which is missing from Parsable_Byte_Stream, but is present in Table_Base. <external_standard_id> is required for Parsable_Bytes_Stream, but there is no external standard for CSV. The value will therefore always be "nil".	Make Table_Delimited an extension of Table_Base. /jsh - Table_Base and Delimited tables are in two different paths of the data structure class hierarchy and in addition inherit from multiple parents (conceptually since the multiple inheritance is not modeled). Table_Base is a fixed sized table. Table_Delimited is a variable sized table. The second distinction is that parsable_byte_stream and all subclasses, for example table_delimited, allow structures that conform to external (non-PDS4) data standards. Table_base is a PDS4 data structure standard.	CLOSED				No change to model.
RFA_Build2c_Beta_049	Mafi	PPI 02- Remove File_PDF	Product_Browse/File_Area_Browse includes both Encoded_Image and File_PDF as allowed subclasses. Encoded_Image allows PDF as one of the external_standard_id's that it describes. It's not clear to me why a separate File_PDF class would be required as well.	Remove the File_PDF class from the IM. Add "PDF-A" as a permissible value for Encoded_Image/external_standard_id.	IMPLEMENTED				Removed the File_PDF class from the IM. Add "PDF-A" as a permissible value for Encoded_Image/external_standard_id.
RFA_Build2c_Beta_050	Mafi	PPI 03 - Document_File/external_standard_id and Document_Format/format_type agreement	In Product_Document/Document_Format_Set document format is described in two separate places: Document_File/external_standard_id Document_Format/format_type This is necessary as Document_Format may be used to describe a document set which consists of multiple files of different types (e.g. an HTML file with embedded image files). In this case, Document_File would be used to describe each of the files which comprise the set, while Document_Format would be used to describe the type of the overall set, and document entry point. In the case of document sets which consist of a single file the two document formats will have the same type. However, the permissible value list for Document_Format/format_type doesn't include all of the types allowed for Document_File/external_standard_id. For example, for a MSWord document there is an external_standard_id "MICROSOFT_WORD", but there is no corresponding format_type.	Change Document_Format_Set to Document_Set. Change Document_Format/format_type to Document_Format/external_standard_id with the same permissible values for both. --- See RFA_Build2c_Beta_020, RFA_Build2c_Beta_023, RFA_Build2c_Beta_023, RFA_Build2c_Beta_025, RFA_Build2c_Beta_024	IMPLEMENTED				See RFA_Build2c_Beta_020, RFA_Build2c_Beta_023, RFA_Build2c_Beta_023, RFA_Build2c_Beta_025, RFA_Build2c_Beta_024

RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_051	Mafi	PPI 04 - Reference_List usage and Internal_Reference/ reference_type permissible values	There was a discussion, and I believe an agreement that references included in Reference_Lists should be tightly coupled. That is to say that they should indicate like types of products (e.g. basic products, collections, or bundles) which are closely related to each other. They should not be used to indicate a basic product's associations with bundles, collections, instruments, targets, etc. - all of which may be indicated in other ways. The documentation that would describe this does not yet exist (SR 3.4 "The Reference List"). In addition, the permissible values that are given for reference_type do not suggest that they have this useage in mind. - In addition, the meanings of the permissible types are not always clear (e.g. has_association, has_resource, the difference between has_publication and has_document).	Include Reference_List usage information in SR 3.4. Add explanations of the reference_type permissible values. Make the following changes to the Reference_List/Internal_Reference/reference_type permissible values: for Product_Collection: curated_by_node or has_node - remove one of these has_investigation - remove (documented in Investigation_Area) has_instrument_host - remove (documented in Investigation_Area) has_instrument - remove (documented in Investigation_Area) has_target - remove (documented in Target_Identification) has_browse_collection, has_calibration_collection, has_context_collection, has_data_collection, has_docment_collection, has_geometry_collection, has_geometry_collection, has_schema_collection, has_spice_kernels_collection - add for Product_Observational: has_node - remove (documented at Collection level) has_primary_collection - remove has_investigation - remove (documented in Investigation_Area) has_instrument_host - remove (documented in Investigation_Area) has_instrument - remove (documented in Investigation_Area)	IMPLEMENTED				rewrote the reference_type values to make them unique, indicate direction, and provide enough context so that the relationship and the involved classes are clear. See RFA_Build2c_Beta_009
RFA_Build2c_Beta_052	Mafi	PPI 05 - Observing_System should be required	Product_Observational/Observation_Area/Observing_System is optional in the current implementation of the model. I recall some discussion that there are instances where Observing_System may not be defined, and that it should not be required. In the majority of cases, however, it should be required.	Make Product_Observational/Observation_Area/Observing_System required (cardinality: 1..inf). Allow it to be nillable if needed.	IMPLEMENTED				Made observing_system required in Observing_Area.
RFA_Build2c_Beta_053	Mafi	PPI 06 - Remove binary field width from data_type	The binary data type values include data width information. This is both redundant and potentially conflicting with the field_length. There was some discussion about using schematron to verify that the width indicated in the data_type matched the width indicated in field_length. An alternate solution would be to remove the width information from the data types, and rely on the field_length value for determining the field width. Schematron could then be used to insure that field_length for binary data types is constrained to allowable values. This would have the following advantages:reduces the number of data types makes field width determination consistent with other data types. For example the current model includes the following: UnsignedMSB2, UnsignedMSB4, UnsignedMSB8. These could be reduced to UnsignedMSB. field_width for a field of type UnsignedMSB would be restricted to 2, 4, or 8 via schematron.	Remove data width information from the data types.	CLOSED		The use of data types with byte count included in the name ensures that the PDS4 maintains valid data representations at the machine level. Supporting points: a) Field_length is optional. b) Two byte field stored in a field_length of say 4. c) Disallow odd byte fields, such as a 3 byte field. d) Constrain data types coming in. - Rules can be written to validate field_width with binary data types.		No change to model
RFA_Build2c_Beta_054	Mafi	PPI 07 - add nillable to DD	The DD currently does not appear to offer any indication of whether elements are nillable or not.	Add nillable to the attributes tracked in the "PDS4 Attribute Definitions" section of the DD.	IMPLEMENTED				Added line to IM and DD stating whether or not an attribute is nillable.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution

RFA_Build2c_Beta_055	Mafi	PPI 08 - Permissible value issues	Quite a few elements have missing or questional permissible values. These need to be addressed.	Do a detailed review of permissible values and modify as necessary.
				The following specific changes should be made:
				   Product_Observational/Investigation_Area/Internal_Reference/reference_type - add permissible value list (none provided in DD)
				   Identification_Area/product_class - add permissible values list suggest values: browse, calibration, collection, context, data (or "observation", not "observational product"), document, SPICE, thumbnail, XML schema
				   Product_Observational/Observing_System/Observing_System_Component/reference_type - add a value for each allowed value of
				.../Observing_System_Component/observing_system_component_type
					IMPLEMENTED		1) The current values for reference types for observing_ system_component_type includes has_instrument, has_instrument_host, and has_detector. Others can be added but they will have to refer to existing products. 2) A systematic bug fix corrected the reference_type permissible value problem problem for investigation_area and several other cases.		See RFA_Build2c_Beta_007, RFA_Build2c_Beta_003

RFA_Build2c_Beta_056	Mafi	PPI 09 - Version 1 - Add <name> to Table_Delimited	Table_Delimited does not allow the <name> element, however, many PDS3 table were named, and based upon the past usage the capability is likely to be useful in PDS4.	Add <name> as an optional element to Product_Observational/File_Area_Observational/Table_Delimited.	CLOSED		The attribute name is a optional element in table_delimited. It is inherited from parsable_byte_stream.	Add name to table_delimited.	No change.
RFA_Build2c_Beta_056	Mafi	PPI 09 - Version 2- Add <name> to Table_Base	Table_Base does not allow the <name> element, however, many PDS3 tables were named, and based upon past usage the capability is likely to be useful in PDS4.	Add <name> as an optional element to Product_Observational/File_Area_Observational/Table_Base	IMPLEMENTED				Added <name> as an optional element to Product_Observational/File_Area_Observational/Table_Base
RFA_Build2c_Beta_057	RAUGH	SBNUMD26: No diacritical marks for author names	The author_list attribute in, for example, the Citation_Information class does not allow non-ASCII characters, which defeats the goal of allowing authors whose names contain diacrtical marks to finally have their names spelled correctly. If this is intentional, it should be in the description of the attribute.	/jsh - Change data type of author_list and editor_list to UTF8_Text_Preserved.	IMPLEMENTED				Changed data type of author_list and editor_list to UTF8_Text_Preserved.
RFA_Build2c_Beta_058	RAUGH	SBNUMD27: No standard values for product_class	The data dictionary lists no standard values for product_class when it occurs in the Identification_Area of a Product_Collection.	Fix schematron test for product_class.	IMPLEMENTED		The allowed values for product_class are now validated by a schematron statement that asserts that the value of the attribute product_class is equivalent to the name of the product class.		See RFA_Build2c_Beta_007.
RFA_Build2c_Beta_059	RAUGH	SBNUMD28: Empty Collections	A collection is not required to have an Inventory sub-class, which in turn implies that a collection is not required to have any members. If this is intentional this special case should be explained in the standards.	Change cardinality of File_Area_Inventory to 1:3 to require at least one inventory.	IMPLEMENTED				Changed cardinality of File_Area_Inventory to 1:3 to require at least one inventory.
RFA_Build2c_Beta_060	RAUGH	SBNUMD29: Schema Collection Requirements.	Why is every XML schema collection required to contain the PDS4 master schema and node dictionary schemas, when those are beyond the control of the data preparer and are maintained and archived by completely different entities?	Update the documentation to make the requirements clear.	CLOSED		The permanent archive is stand-alone therefore they are needed; they are secondary members and would use lid or lidvid to the master schema. PDS will periodically archive all schemas.	Update STD REFs	No change to model

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_061	RAUGH	SBNUMD30: "Collection_" required in all collection label names	The requirement that all collection labels contain the 10 letters "collection_" plus at least 4 additional characters seems excessive, especially since a) there is no requirement that collection members be in the same directory as the label; and b) the collection type is already included in the required directory name. This excessive number of required characters could present a real problem on operating systems and media where the number of significant characters in file names is limited.	Update the documentation regarding collection label names.	CLOSED		standards reference - 2.6 - collection data.xml -> collection.xml; One collection per subdirectory;		No change to model
RFA_Build2c_Beta_062	RAUGH	SBNUMD31: Inventory table requirements missing	The standards reference does not seem to contain any requirements on the collection inventory table, though the DPH strongly implies that there are very specific requirements. Even then, the DPH description doesn't map to the actual contents of the master schema file, and the example in that document seems to imply that the inventory table should point to data files rather than labels.	Update the standards reference with requirements on the collection inventory table that are consistent with the currently modeled inventory table and schematron rules.	IMPLEMENTED		Recently three inventory tables were combined into one. The value of inventory reference_type now indicates the type of inventory. (has_member_LIDVID_Primary, has_member_LIDVID_Secondary, has_member_LID_Secondary) See RFA_Build2c_Beta_067		The schematron file rules for inventory have been updated to include constraints on field_number, data_type, and field_name. The value of reference_type is now used to validate the fields.
RFA_Build2c_Beta_063	RAUGH	SBNUMD32: Context Collection PDS3-centric	The context collection as presented in the standards reference seems to be entirely PDS3-centric – ignoring the existence of non-mission data - and worse than that the file naming constraints require that multiple context collections be created for the common case of missions with more than on instrument or instrument host. It is ridiculous to require the creation of multiple context collections because of fixed filename constraints, which in themselves seem to me to be needlessly proscriptive even in the very small number of cases in which they might not be onerous.	There are two issues 1) The handling of non-mission data is addressed in RFA 101; 2) The file_naming constraints needs to be addressed in the Standards Reference. - Mitch to check Standards Reference and report to Elizabeth.	IMPLEMENTED				All context collections are maintained by the PDS nodes. Data providers only provide context products.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_064	RAUGH	SBNUMD33: Inventory File examples imply non-existent requirements	The inventory table examples in the standards reference and DPH both show commas in the gutter space between the required fields in the data file, and refer to a "field delimiter" in the descriptive text. The same descriptive text also talks about fields which are padded out to the full field width. Either the Inventory table should be fixed width, or it should be delimited, but the two absolutely should not be conflated, and examples should not show anything which implies a requirement that doesn't actually exist. The current Inventory object uses a fixed-width Record_Character (or it should be fixed-width – see previous RFA about the lack of a required field_length attribute). If the intention is to require fixed-width tables for inventory data then there should be no mention of "field delimiters" in the acccompanying text and the commas in the examples should be deleted. If the intention is to require field delimiters, then the Inventory class should use Record_Delimited and the examples should not have fields padded out to a fixed width.	DPH - commas in the gutter space. Conflating delimited and fixed width tables. Is "gutter space" actually defined. /jsh - Update the standards reference and the dph so that it is clear that inventories are of type table_character and that field_delimiters are not an integral part of the data structures. However commas and other characters can be inserted into the fixed width table as field separators.	CLOSED		delimiters are allowed in inventories even though they are a type of table_character. However the documentation needs to make it clear that this is not a required delimiter.		No change to model. Documents will be updated.
RFA_Build2c_Beta_065	RAUGH	SBNUMD34: Undocumented constraint on Collection Inventory table	The reference_type attribute of the Inventory object is required to appear exactly once, and a collection may have up to three Inventory subclasses. But the standards reference allows only one, fixed name for collection inventory tables, which is entirely dictated by the collection type (the footnote only allows prefixes to distinguish between collections, not between inventory tables of the same collection). The logical result is that if a collection contains more than one type of member, and thus requires more than one type of inventory table, all tables must be concatenated in the same collection_*_inventory.tab file. This requirement, however, does not appear to be documented or explained.	IM allows three inventory table each with a single internal name and reference type. Standards reference issue.	CLOSED				No Change to model.
RFA_Build2c_Beta_066	RAUGH	SBNUMD35: No record delimiter in Inventory tabe	The Inventory object contains no record_delimiter attribute. Since this is considered an attribute of a table rather than the record, it must be explicitly stated here, unless the intention is to require than no record delimiters be used in inventory tables – which would need to be very clearly and repeatedly stated in the standards reference and elsewhere. Note that record_delimiter is not a required attribute of Table_Base or Table_Character anyway, so the same problem exists for all Table_Base/Table_Character derivatives.	Make the Inventory class a subclass of Table_Character. The attribute record_delimiter will then be inherited. Make the attribute record_delimiter required in Table_Character. Record_delimiter is not an attribute of the class Table_Base since Table_Base is the parent of all tables.	IMPLEMENTED				See RFA_Build2c_Beta_046 and RFA_Build2c_Beta_006

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_067	RAUGH	SBNUMD36: Schematron file refers to non-existent Inventory_* objects	The Schematron file PDS4_PDS_0700j.sch refers to the following non-existent objects: pds:Inventory_LIDVID_Primary pds:Inventory_LIDVID_Secondary pds:Inventory_LID_Secondary These do not exist in the master schema. There are no rules for "pds:Inventory". The standards reference also refers to the above non-existent classes.	Rewrite Schematron statements for Inventory.	IMPLEMENTED				Rewrite Schematron statements for Inventory.
RFA_Build2c_Beta_068	RAUGH	SBNUMD37: Undocumented apparent requirements on Inventory tables	Ignoring the discrepancy in Inventory node names, there seems to be an intent in the Schematron file and in the examples shown in the standards reference to require specific names, data types, and field order in the inventory tables. I could not find these requirements documented in the text of the standards reference.	Update the documentation to make the requirements clear.	CLOSED				No change to model.
RFA_Build2c_Beta_069	RAUGH	SBNUMD38: Bundle-Collection relationship	Section 2.1 of the standards reference strongly implies that there is only one bundle per data repository. This seems like an unnatural and unenforceable requirement.	Update the documentation to make the requirements clear.	CLOSED				No change to model.
RFA_Build2c_Beta_070	RAUGH	SBNUMD39: Text/Figure inconsistency in SR Chapter 2; onerous name requirements	The beginning of Chapter 2 states that each collection must be in a separate subdirectory under the bundle root, and lays out naming conventions for cases where there are multiple collections of a type. But in the subsequent Directory sections, only the Browse section repeats the suffixing convention and provides rules for adding suffixes to required file names. First, this implies that the Browse directory is somehow different from the others with respect to naming conventions, which presumably isn't true. Second, if only one collection is allowed in a directory, then why allow suffixes on the only collection label allowed to be in the directory? In fact, why even require that the collection type, which must be present in the directory name, be duplicated in the collection label name, and then duplicated again and further augmented in the name of the collection inventory table file?	Update the documentation to make the requirements clear.	CLOSED				No change to model.
RFA_Build2c_Beta_071	RAUGH	SBNUMD40: Bundle content requirements	Bundles are required to have at least one data collection and at least one schema collection. My Deep Impact documentation is so extensive I want to have a separate document bundle, and I would never create a tailored schema for a document, so neither required directory would have any contents – well, except for the filler files I would also have to create because they are required. Further, there are many SBN data sets for which no tailored schema would ever exist – thus nothing to put in the required schema collection.	Update the documentation to make the requirements clear.	CLOSED				No change to model.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_072	RAUGH	SBNUMD41: Inconsistent collection naming requirements	When multiple data collections exist in a bundle, the standards reference indicates that the required collection_data.xml and collection_data_inventory.tab files have modifying prefixes added. For all other collection types, the standards references indicates that a modifying suffix be used. This seems pointlessly arbitrary.	Update the documentation to make the requirements clear.	CLOSED				No change to model.
RFA_Build2c_Beta_073	RAUGH	SBNUMD43: product_class standard value for Product_Bundle	In all other cases, the product_class values corresponds to the name of the <Product_*> tag containing the Identification_area. For Product_Bundle, though, the value appears to be Product_Archive_Bundle.	Fix schematron test for product_class.	IMPLEMENTED		The allowed values for product_class are now validated by a schematron statement that asserts that the value of the attribute product_class is equivalent to the name of the product class.		See RFA_Build2c_Beta_007.
RFA_Build2c_Beta_074	RAUGH	SBNUMD44: Bundle allows LIDVID reference?	The Bundle_Member_Entry allows either lid_reference or lidvid_reference. This implies that different versions of a collection might be members (in particular, primary members) of different bundles. Is this the intent? If so, is this wise?	Respond to question.	CLOSED				No change to model.
RFA_Build2c_Beta_075	RAUGH	SBNUMD45: Bundle contains no resolvable physical references?	My understanding was that the Bundle inventory (in the .xml label) would indicate the physical location of the member Collection labels, the Collection inventory (in the inventory table) would indicate the physical location of the Product labels, and the Product labels would indicate the physical location of the data files – so that it would be possible to crawl the contents of a bundle by following a chain of physical pointers (enabling a validation routine, for example, to determine if there is a discrepancy between the membership list in the inventory/label and the actual directory contents, or allowing a packaging routine to locate files directly rather than having to make potentially thousands of calls to a registry service). But the Bundle member entries do not contain a physical location, only a logical reference (and the situation with Collections is unclear). Is this a conscious decision to rely on software to resolve all references? Is this wise? What happens in the deep archive?	The bundle member entry contains the file_specification_name. See http://pds.nasa.gov/pds4/doc/im/v07/index.html#class_pds_bundle_member_entry and	CLOSED				No change to model.
RFA_Build2c_Beta_076	RAUGH	SBNUMD46: Schematron errors for Bundle/Collection/Document	As with many other class names, the Schematron file omits the "pds:" namespace prefix from Bundle and Collection checks, which prevents the items from being validated. The "pds:logical_identifier" reference to the non-existent attribute is also repeated in the Bundle/Collection rules.	Add namespaces for class names. Change logical_identifier to *_reference.	IMPLEMENTED				Added namespaces for class names. Changed logical_identifier to *_reference. See RFA_Build2c_Beta_027 and RFA_Build2c_Beta_010.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_077	RAUGH	SBNUMD47: No standard value list for product_class in Context product	The data dictionary does not contain a standard value list for the product_class attribute of Identification_Area when it appears in a Product_Context class.	Fix schematron test for product_class.	IMPLEMENTED		The allowed values for product_class are now validated by a schematron statement that asserts that the value of the attribute product_class is equivalent to the name of the product class.		See RFA_Build2c_Beta_007
RFA_Build2c_Beta_078	RAUGH	SBNUMD48: Bad placement of Reference_List in Product_Context	In Product_Context, the list of references should come after the main context object description, not before it	In all products (Product_Document excepted) reference_list follows the identification_area, expect when there is an observation_area, then it follows that.	CLOSED				No Change
RFA_Build2c_Beta_079	RAUGH	SBNUMD49: Bad standard values for reference_type in Product_Context	In the Internal_Reference class of Product_Context, the standard values for reference_type are once again not user-friendly, and even allowing for that don't seem to give a good selection of reasons for why a product might be referenced in a context product. For example, for my prototype mission context product I have two republished document products to cite – one is a mission overview, one covers the design principals and procedures involved in developing the mission. Neither "has_document" nor "has_publication" (and what is the difference between those two?) is all that enlightening, although either would do if there is no intent to convey useful information. And what is the appropriate value for referencing an entire documentation collection or, in may case, bundle?	If further differentiation between relationships is desired by the data provider then additional reference type values may be proposed by the data providers . The reference type value have been rewritten in any case.	CLOSED				Rewrote the reference_type values to make them unique, indicate direction, and provide enough context so that the relationship and the involved classes are clear.
RFA_Build2c_Beta_080	RAUGH	SBNUMD50: Inconsistent name requirement for catalog_label.xml	Ignoring for the moment the fact that an XML catalog file is not an archival quality file, section 2.11 of the standards reference requires that the XML label for it be called "catalog_label.xml". This is the only XML label file that is required to have "_label" suffix, and I can see no reason for it.	Respond to point.	CLOSED				No change to model
RFA_Build2c_Beta_081	RAUGH	SBNUMD 51 or 59?: Users should not be writing labels for PDS Master Schema; or modifying Master Schema	If data preparers are going to be required to include copies of the PDS Master Schema in their archives, then a label should be provided by PDS as part of the download package. In addition, users should not be able to modify either the Master Schema or its contents. This will have to be validated and repeatedly verified for online archives, somehow, as part of PDS operations. The same holds true for node schema – especially those from nodes other than the lead node for the particular collection.	Users will be referencing master schemas as secondary members. They will not have to create labels for the master schema.	CLOSED				No change to model
RFA_Build2c_Beta_082	RAUGH	SBNUMD52: Missing Standard value for product_class for Product_XML_Schema	The product_class standard value list in the Schematron file does not include a value for schema products.	Fix schematron test for product_class.	IMPLEMENTED		The allowed values for product_class are now validated by a schematron statement that asserts that the value of the attribute product_class is equivalent to the name of the product class..		See RFA_Build2c_Beta_007.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_083	RAUGH	SBNUMD 53: Standard values inconsistent with DD definition of product_class	The abridged data dictionary lists no standard values for product_class at all. The definition of the attribute lists example values in that document are descriptive ("observational product", "document"). The values defined in the Schematron file are the names of Product classes ("Product_Observational", "Product_Document").	Fix schematron test for product_class. Fix attrbute definition.	IMPLEMENTED		The allowed values for product_class are now validated by a schematron statement that asserts that the value of the attribute product_class is equivalent to the name of the product class.		See RFA_Build2c_Beta_007. Fixed attribute definition.
RFA_Build2c_Beta_084	RAUGH	SBNUMD 54: Bad indentation in Data Dictionary for Identification_Area	In all the Identification_Area descriptions I checked in the abridged data dictionary (for example, Product_Observational), the attributes are listed after the subclasses, rather than before. Worse, the attributes are indented such that they look like they are the attributes of the class immediately above them (i.e., Modification_Area), not the Identification_Area. Both these things make it very difficult to find the attributes and trace them to their definitions and standard value lists.	Modify DD generation code.	IMPLEMENTED				Modified DD generation code.
RFA_Build2c_Beta_085	RAUGH	SBNUMD 55: Standard values for XML Schema external_standard_i d e not sufficiently specific	There are non-backwards compatible differences between XML Schema 1.0 and Schema 1.1. The standard value list for external_standard_id needs to be sufficiently explicit in ALL cases to ensure the user can locate the appropriate standards document. Thus, the version of the XML Schema standard must be included in the standard value.	Add external_standard_version_id.	IMPLEMENTED				Added external_standard_version_id. - See RFA_Build2c_Beta_023 and _025
RFA_Build2c_Beta_086	RAUGH	SBNUMD 56: encoding_type standard value misleading in XML_Schema class	The XML_Schema class encoding_type has a requried value of CHARACTER. This is the same encoding type used for, for example, Table_Character, where the contents are restricted to 7-bit printable ASCII. XML files are UTF-8 by default, and every XML file I've encountered coming from PDS has this opening line: <?xml version="1.0" encoding="UTF-8"?> Which clearly states that the encoding is UTF-8. If "CHARACTER" is not intended to constrain files to ASCII, then it should be well and prominently defined. If it is, then it is not an appropriate encoding_type for XML files. Alternately, PDS must required that all XML files use some other encoding value in the XML files created for archving. Another alternative would be to require an encoding_type of "BINARY" for all XML files.	Write a value meaning for CHARACTER to make it clear that it does not constrain the DO to ASCII only.	IMPLEMENTED				Provided value meanings for BINARY and CHARACTER permissible values for encoding_type. The value meaning for CHARACTER now makes it clear that ASCII and UTF-8 character encodings are allowed.
RFA_Build2c_Beta_087	RAUGH	SBNUMD 57: No external_standard_i d value for Schematron files	If the required schema collection is going to be required to contain copies of the master schematron file, or any other schematron file, then there must be a valid external_standard_id that's appropriate. Something like "Schematron 2.0" (or "Schematron 1.0" if the older version is being used).	Fix external_standard_id for schematron in XML_SCHEMA class. - Added external_standard_id.	IMPLEMENTED				Added external_standard_version_id. - See RFA_Build2c_Beta_023 and _025
RFA_Build2c_Beta_088	RAUGH	SBNUMD 58: No offset needed for XML_Schema	According to XML syntax rules, no valid XML file can ever contain anything other other than a single XML document which begins at the first character. So the presence of the offset attribute implies that somehow PDS could violate this requirement. Offset should be forbidden in all object types that must be alone in a single file.	All data objects have been define as having offsets at the parent (fundamental data structure) level. Add schematron rules.	POSTPONED			Identity the specific Data Objects where offset must be zero and create schematron rules to validate.	Add schematron rule.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_089	RAUGH	SBNUMD 59: Axis storage order and display direction fixed in Array_2D_Image; Conflicting definitions in standards and Schematron	The current standards reference states that arrays must be stored in "fastest-varying-pixel-first order" (p. 35). As far as I can tell, this is intended to mean FIRST_INDEX_FASTEST, in the old PDS3 standard value notation. The Schematron file, however, allows only LAST_INDEX_FASTEST as the value of axis_index_order (which agrees with the constraint in the Information Model). In addition, line_display_direction and sample_display_direction have been fixed such that samples can only be displayed left to right, and lines either up or down. Now, I thought that these values were fixed as a result of a Management Council decision made in Executive Session after extensive discussions in December 2011. But when I mentioned these constraints to my manager, he stated that not only had the MC not made a decision, but the strong leaning of the group seemed to be to leaving these various parameters unconstrained, as they had been in PDS3. So if the intention is to fix these variables, then a) the MC is going to need to sign off, since they appear to have a distinctly different opinion, and b) the discrepancy between the standards and the IM/Schematron file needs to fixed ASAP.	MC needs to make decision or kick it back down to us.- or we can all forget about it. MC has handed it back. Mitch feels that there is no need for MC to vote on it. Standards Reference will be updated and MC will be appraised. Send out week early before next MC telecon for MC review and approval.	CLOSED				An AI was taken to update the Standards Reference on how Axis_Array sequence numbers are to be assigned. See RFA_Build2c_Beta_039. No change to model.
RFA_Build2c_Beta_090	RAUGH	SBNUMD 60: Version_id inconsistency	The version_id in Modification_Detail does not have the same data type constraints as the version_id in, for example, Identification_Area. I thought the intention was that the version_id in the history area detailed changes for each version of the product, so the version_id should reflect the version_id of the Identification_Area at the time of the modification – and thus should have the same data type restrictions. If this is not the case, it is a very, very bad idea to use the same tag to indicate a very specific data type in one class, and a completely non-specific type in an adjacent class. In the latter case the name of the attribute in Modification_Detail should be changed.	Make version_id of the modification_Detail have same data type constraints as version_id in Identification_Area.	IMPLEMENTED				Made version_id of the modification_Detail have same data type constraints as version_id in Identification_Area.
RFA_Build2c_Beta_091	RAUGH	SBNUMD 61: Investigation_Area requires "name", reference	Investigation_Area requires a "name" attribute. There is no suitable value for this for individual, ground-based observations. Assigning one implies a level of coordination and corroboration that does not exist. Similarly, Investigation_Area requires an internal reference to some other PDS product. Even if you force such a product to exist, it would contain no information.	A "NIL" investigation will be created by SBN for their special cases.	CLOSED				No change to model.
RFA_Build2c_Beta_092	RAUGH	SBNUMD 62: Observing_System not required	Observing_System does not appear to be required in an observational product. Is this intentional? This is where things like spacecraft and instrument links are made.		IMPLEMENTED				Made observing_system required in observing_area.

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RFA #		Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_093		RAUGH	SBNUMD 63: No valid reference_types for ground-based observing	There are no valid values appropriate to the Internal_Reference attribute reference_type for gounrd-based observing components like observatories and telescopes.	Additional values for reference_type may be suggested by the data providers.	CLOSED				Rewrote the reference_type values to make them unique, indicate direction, and provide enough context so that the relationship and the involved classes are clear. See RFA_Build2c_Beta_009
RFA_Build2c_Beta_094		RAUGH	SBNUMD 64 Duplicate of SBNUMD 63							
RFA_Build2c_Beta_095		RAUGH	SBNUMD 65: No suitable data type for string columns in Table_ Character	There are two data types, ASCII_Short_String_Collapsed and ASCII_Text_Collapsed, that sound like the same thing, but which aren't really suitable for use in tabular data. Similarly for the non-collapsed versions. White space normalization should not be performed routinely on fixed-width tabular data files, nor should users be given the idea they can put tabs and line breaks in the middle of character table records. A simple type, like ASCII_String or ASCII_Characters would be more appropriate. In particular, it looks bizarre to define single character fields as type ASCII_Short_String_Collapsed. A similar problem arises for binary tables with string fields.	Add ASCII_String and UTF-8_String to Table_Character, Table_Binary, Table_Delimited - derived from XML schema string.	IMPLEMENTED				Added ASCII_String and UTF_String as data types
RFA_Build2c_Beta_096		MARTIN	Version 4 OASIS ebXML Standard	Determine impact of updated ebXML standard on PDS4 system and data The PDS4 system and data design follows the terminology and some of the design of the OASIS ebXML RegRep Version 3 standard. A new version of this standard was approved in early 2012, with minor changes in the architecture and terminology. As an example, the LifeCycleManager interface has been simplified to include only submit, update and remove objects protocols. The current PDS4 implementation includes deprecate, undeprecate and approve protocols which were defined in ebXML Version 3.	SDWG and DDWG should evaluate changes between ebXML versions and determine their impact on the PDS4 use cases, system design and data design and update where appropriate. My recommendation is that we adopt Version 4.	CLOSED		A draft of version 4 of the ebXML standard was available and reviewed around the time when development of the Registry Service commenced. At that time the development team decided to design and implement the software based on version 3 due to a few unfavorable changes planned for the new version. The latest version of the standard has not been reviewed since that time. Based on the level of conformance, or lack there of, with version 3 of the standard (see RFA_Build2c_Beta_097) it is not clear that attempts to make the software compliant with version 4 will help the software meet PDS requirements.	Once the PDS requirements are satisfied, future development work (post Build 3) may focus on issues of conformance to the ebXML standard version 4, but only where it advances usability for PDS.	No immediate action will be taken but the request will be taken under advisement for future development work.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_097	MARTIN	Registry compatibility/compliance with ebXML RegRep.	The PDS4 architecture does not comply with many aspects of ebXML RegRep. The PDS4 registry architecture embraces some of the concepts and terminology from the OASIS ebXML Registry/Repository standard. This standard defines a set of registry services and a registry information model and is intended to support discovery and sharing of services and resources. The registry services include a QueryManager Interface which defines how the registry is searched and a LifeCycleManager Interface which defines how registry entries are submitted, updated and removed. There are also services for event notification, messaging and federation. The PDS implementation supports the functionality of the LifeCycleManager Interface, but only part of the functionality of the QueryManager and other services. The standard includes built-in support for handling registry AuditableEvents (registryobject creation, update or deletion) and providing subscriptions and notifications based on those events. For example the creation of a new archive_bundle might cause email notifications to be sent to a list of persons.	PDS should evaluate the RegRep compliance list and determine what capabilities it should support to promote future interoperability with other ebXML registry federations (IPDA for example). A rough cost/benefit analysis should be provided for unsupported features (e.g. support for SOAP and WSDL). Below is my rough evaluation of compliance with the ebXML Version 4 conformance list. QueryManager Interface PDS4 Support Support for default QueryRequest format "application/x-ebrs+xml" RegistryLite No Local query invocation RegistryLite No Stored query publishing and invocation RegistryLite No Query plugin configuration and invocation RegistryLite No Iterative query invocation RegistryFull No Federated query invocation RegistryFull ? Support for depth parameter RegistryFull No Canonical Queries AdhocQuery RegistryLite No BasicQuery RegistryLite No ClassificationSchemeSelector RegistryFull ?	CLOSED		The decision to design and implement the Registry Service based on the ebXML standard or actually the CCSDS interpretation of this standard, was based on using the standard as a guideline for the design in lieu of implementing a registry from scratch. There was never an intent to implement a registry that conformed with the full ebXML standard. There are several areas, especially on the service side, where the PDS 2010 design has opted to implement capabilities in services outside of the registry (e.g., security, subscription and search). That said, the development team has made a concerted effort to conform to the standard for the implemented capabilities required to satisfy the PDS requirements.	Once the PDS requirements are satisfied, future development work (post Build 3) may focus on issues of conformance to the ebXML standard but only where it advances usability for PDS.	No immediate action will be taken but the request will be taken under advisement for future development work.
RFA_Build2c_Beta_098	MARTIN	Use of ebXML provenance information model	The PDS4 registry utilizes most of the core information model from the ebXML standard. However it does not use the ebXML provenance classes that include built-in intrinsic object classes for organizations, people and contact information (address, phone, email). The PDS4 implementation does not use these built-in classes, but instead defines extrinsic object classes for Node, PDS_Affiliate and PDS_Guest. Some of the other registry capabilities can take advantage of having this information stored in a canonical fashion. For example, notifications and subscriptions refer to person objects. In the long run, not using the ebXML information model could reduce the potential for interoperability with other ebXML registry/repository implementations and make it more difficult to implement other ebXML features. The following paragraphs summarize the ebXML and PDS4 provenance classes. The ebXML model has classes Organization and Person. An Organization has elements guid, lid, objectType, Name, Description, VersionInfo, Classification, ExternalIdentifier and ExternalLink and attribute primary_contact. It can also have an embedded sub-Organization element. A Person has a elements guid, lid, objectType, Name, Description, VersionInfo, Classification, ExternalIdentifier and ExternalLink, and a PersonName element consisting of FirstName,	Evaluate the impact of using the ebXML provenance information model instead of the PDS specific extrinsic object classes.	CLOSED		Development of the Registry Service has focused on implementing aspects of the ebXML standard required to satisfy the PDS requirements. Since the PDS information model already included several classes that were equivalent to the ebXML intrinsics classes, it made sense to include these classes as PDS-specific extrinsic classes. That said, the extrinsic classes have sufficient information to populate their respective intrinsic classes.	Once the PDS requirements are satisfied, future development work (post Build 3) may focus on populating the intrinsic classes when and if they are needed for interoperability between registries and where it advances usability for PDS.	No immediate action will be taken but the request will be taken under advisement for future development work.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_099	MARTIN	Use of ebXML Classification Schemes and Associations	The ebXML architecture provides a classification system to organize much of the metadata content. Any metadata attribute that might be represented by an enumerated list can be become a classification schema with the list constituting classification nodes which can then be associated with a product. This in effect exposes the important classifications of metadata in the registry classification structure. The current PDS implementation presents these as attributes of information model classes with standard values that are provided in the data dictionary.	Evaluate the use Classification Schemes for capturing enumerated list type metadata (instrument, mission, investigation). Evaluate how this would impact the data dictionary architecture and how it would work in a distributed, federated registry system.	IMPLEMENTED	Build 3	The current design is to use Classification Schemes within the Registry Service for just this purpose. Currently a registry configuration file is generated from the PDS4 information model. The configuration file inludes classification scheme and classification node information, object type and association type information. This information is used for registry configuration. There has not been a rush to incorporate the classifications mentioned in this RFA due to the instability of these classifications in the information model to date and the continued use of the PDS3 mechanism for handling these classifications.	The plan for the Build 3 timeframe is to review the PDS3 mechanism for handling these classifications and determine whether capturing this information in the registry will advance its usability for PDS.	The PDS4 mechanism is already in place for exporting classification scheme and node information from the PDS4 information model to the Registry Service. Future efforts will look to export more of this information to the registry.
RFA_Build2c_Beta_100	Raugh	SBNUMD 66: No suitable value for type of SpeX instrument	The SpeX instrument is described as spectrograph/imager. I'm told a spectrograph is not the same thing as a spectrometer. Consequently, there is no standard value for "type" in Instrument that corresponds to this instrument.	/jsh - Add Spectrograph_Imager.	IMPLEMENTED				Added Spectrograph_Imager.
RFA_Build2c_Beta_101	Raugh	SBNUMD 67: No node-specific information allowed in context objects	There is no way to include node-specific classes in context objects. Since the current context design mimics the PDS catalog object design and is poorly suited to SBN observing systems and targets, it would be useful to be able to provide node classes to ameliorate the deficiencies in the PDS4 context objects for small bodies science.	Add node area to product_context.	IMPLEMENTED				Added node area to product_context, after identification_area.
RFA_Build2c_Beta_102	Raugh	SBNUMD 68: "Fields" not sufficiently defined	The definition in the data dictionary does not indicate what the proper value of "fields" is for a Record_Character or a Record_Binary which contains grouped fields.		IMPLEMENTED				Set the definition of the attribute fields to "The fields attribute provides a count of the total number of scalar fields in a table record. For tables with grouped fields, the number of fields represented by that group is the number of fields within the group multiplied by the repetitions attribute for that group."
RFA_Build2c_Beta_103	Slavney	GEOWU_13	There are no appropriate values in <primary_result_description> class for an instrument that records motor currents as a function of time and position.	Revise the standard values for <data_regime> and <type> /jsh - Domain expert(s) to provide a type for and instrument that records motor currents	POSTPONED				
RFA_Build2c_Beta_104	Slavney	GEOWU_14	The <field_length> attribute in <field_character> for the inventory of a collection product is optional.	Field_length should be required in this context because inventory tables of collections are fixed width tables.	CLOSED		field_length was made required.		See RFA_Build2c_Beta_004.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_105	Slavney	GEOWU_15	The <file_specification_name> is optional in <bundle_member_entry> of a bundle product.	file_specification_name should be required along with a lid or lidvid reference for each collection in the bundle.	CLOSED		A secondary reference using a LID does not require a file_specification_name.		No change to model.
RFA_Build2c_Beta_106	Slavney	GEOWU_16	The proper use of xml catalog files and the content of xml prefix are not well documented	Fix the documentation so that the use of catalog files and the content of the xml prefix are well described.	IMPLEMENTED				See RFA_Build2c_Beta_033.
RFA_Build2c_Beta_107	Slavney	GEOWU_17	The data dictionary is cumbersome to use, hard to search, e.g., to find standard values of attributes. In general there is no easy method for finding required vs optional attributes or standard values when working with a label template.	Make the data dictionary more user friendly. For example, attributes should be listed in the order that the xml schema expects them and standard values should be listed with the correct case that is allowed by the schematron tests.	CLOSED			A new document is under development.	No change to existing DD layout.
RFA_Build2c_Beta_108	Slavney	GEOWU_18	The standard values for <product_class> all start with product_..., which is redundant.	Change the standard values of <product_class>.	IMPLEMENTED		Product_Class no longers has standard values. However the value of product_class is the name of the product. The name of each product is prefixed by "Product_".		See RFA_Build2c_Beta_007 and all related RFAs associated with product_class.
RFA_Build2c_Beta_109	Slavney	GEOWU_19	In document products, the citation class is redundant with the document description class.	Choose one or the other. /jsh - After DDWG discussion it was decided that the citation has a different set of requirements on its attribute values since it is primarily used for creating ADS abstracts. Therefore both areas must be completed by the data provider. However the document_name data type must be changed to UTF8_Text_Preserved to be more general than the data type for Title.	IMPLEMENTED				Change the document_name data type to UTF8_Text_Preserved to be more general than the data type for Title.
RFA_Build2c_Beta_110	Slavney	GEOWU_20	In document products, the reference list class is located between the document format set and document description classes when it is located with the preamble classes in other products.	Model document products in the same way as other products in terms of the preamble classes.	IMPLEMENTED				Reordered element in Product_Document so that reference_list follows identification_area.
RFA_Build2c_Beta_111	Slavney	GEOWU_21	Document products have no method for making cross reference or associations to other products, such as the mission, instrument or data set that the document applies to.	Model document products in the same way as other products in terms of the preamble classes.	IMPLEMENTED				Product_Document now has a Document_Subject_Area to allow cross references to other products. This is also allowed in reference_list.
RFA_Build2c_Beta_112	Slavney	GEOWU_22	The definitions of all the *_date_time attributes do not indicate whether UTC time is required or other time zones may be used.	Revised the definitions for these attributes and explicitly say that UTC is required if that is the case. Also, the validation would need to check that the UTC indicator (Z) is included if UTC is required.	CLOSED		Standards reference to be updated.		Simply require that the data provider needs to provide UTC, no local time. No change to model
RFA_Build2c_Beta_113	Slavney	GEOWU_23	The document_file class contains both file_name and directory_path_name attributes as opposed to one attribute – file_specification_name. This is the only place that directory_path_name is used in the schema.	Use one attribute - file_specification_name.	CLOSED		The file_name is inherited from the parent class, FILE, so adding file_specificaition_name would add duplicate information. In addition, files in a directory hierarchy do not need directory path specified since it is set by the root file.		No change to model; Explain this better in standards reference.
RFA_Build2c_Beta_114	Slavney	GEOWU_24	The document_file class is an extension of the file class and as such includes a number of optional attributes that are not needed to describe documents, such as records, maximum_record_bytes, etc.	Redo the document_file class.	CLOSED		The additional optional attributes are inherited from the parent class, FILE. Since the attributes are optional and since there might be a reason to use them, the decision was made to continue with the current design.		No change to model
RFA_Build2c_Beta_115	Slavney	GEOWU_25	The encoding_type attribute in the document_file class is redundant.	Remove it. - Done.	IMPLEMENTED				See RFA_Build2c_Beta_024.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_116	Slavney	GEOWU_26	The schema contains a class <file_PDF>. This class seems redundant if PDF documents are labeled with the product_document. It is currently only used as a type of browse product.	Remove it.	IMPLEMENTED				See RFA_Build2c_Beta_049.
RFA_Build2c_Beta_117	Slavney	GEOWU_27	The document model smacks of combined detached labels from PDS3 when there is more than one format for a document.	Use separate labels for each format. /jsh - After DDWG discussion it was decided to continue with the existing model.	CLOSED				No Change.
RFA_Build2c_Beta_118	Slavney	GEOWU_28	We also found the same issues noted in RFAs 20, 21, 22, and 24 from the SBN and concur with the other document RFAs submitted by the SBN.	Done.	CLOSED				See noted RFAs.
RFA_Build2c_Beta_119	Raugh	SBNUMD 69: Modification_Detail constrained to one occurrence	The Modification_History section (in the Identification_Area) is required to contain exactly one Modification_Detail subclass. This is clearly a mistake – it would be ridiculous to require reptition of the entire history class to add an additional detail, and that class is only allowed to appear at most once in each Identification Area anyway.		CLOSED				See RFA_Build2c_Beta_015.
RFA_Build2c_Beta_120	Raugh	SBNUMD 70: No versioning guidance	Nowhere in the documentation can I find any indication of how I am supposed to actually maintain multiple versions of observational, collection, or bundle products. Do version identifiers go into file names? Do I create separate directories for each set of product versions? What happens to the v1.0 collection product when there is a v2.0 of the same collection? If I only change the label and not the data of an observational product, would my version 1.1 label point to the same data file as the v1.0 label, or do I have to make a new copy of the (unchanged) data file? And so on…	Standard Reference to be updated to address this issue.	CLOSED				No change to model.
RFA_Build2c_Beta_121	Simpson	RS05 - Type-a	1a. We frequently refer to 'product type,' but we have never defined what it means. 'Type' is used in the Information Model more or less reasonably. For example, it is an attribute for Instrument (enumerated) and Detector (not enumerated).		POSTPONED				
RFA_Build2c_Beta_122	Simpson	RS06 - Type-b	1b. Type, as used in Primary_Result_Description (PRD), comes as close to being 'product type' as any use in the IM. But this is one case where it is not reasonable. The enumerated values for PRD are a mishmash of disciplines, tools, and measurements — there are too many 'apples' and 'oranges'. For example, "count," "instrument," "photometry," and "null_result" simply don't represent distinguishable parts of a 'result' space. Also, "image" and "spectrum" are enumerated values, but "table" is not. The list is already so scattered that it won't be useful for searching if left in its present state.		POSTPONED				

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_123	Simpson	RS07 - Type-c	1c. One possible solution to the 'product type' dilemma (1a) is to use the subclasses of Product — that is, attribute definition, browse, bundle, collection, context, … observational, … , SPICE kernel, …, XML schema, and zipped, where I have skipped over the PDS3 product types for simplicity. Most of the familiar data products (images, tables, etc.) are buried under 'observational.' I wouldn't necessarily add a 'type' attribute to each of these class definitions; advising users that Product_Browse is type=browse seems a little redundant. But the fact that there is a list would give us some traction when we wanted to launch a discussion that includes 'product type.'		POSTPONED				
RFA_Build2c_Beta_124	Simpson	RS08 - Type-d	1d. Fixing type in PRD is more difficult. PRD is the object of an association from Observation_Area, which is the object of an association from Product_Observational (technically, PRD can also appear under Product_SPICE_Kernel, but that is nonsensical). The easiest fix is to limit type to the value "observational" — but users should already have this information from the root tag. So maybe the next level down (array*, header*, parsable byte stream, stream text, and table*) is the right set of PRD::type values.		POSTPONED				
RFA_Build2c_Beta_125	Simpson	RS09 - Type-e	1e. Anne may want to keep all of the existing PRD::type values. I think they would be better used in description. A list as long and disparate as we have now will only grow as data providers add their own values rather than trying to fit into pre-existing niches that don't divide up 'result' space in a meaningful way.		POSTPONED				
RFA_Build2c_Beta_126	Simpson	RS05 - Instrument_type	2. I contend that Detector_Array and Meteorology are not suitable enumerated values of Instrument::type. Detector_Array may be a component of an instrument, but it is not an instrument. Meteorology is a science, not an instrument.		POSTPONED				
RFA_Build2c_Beta_127	Simpson	RS10 - Investigation_type	3. Investigation::type and Investigation_Area::type have exactly the same four enumerated values. They are defined in the latter case, not in the former. Use of Investigation and Investigation_Area needs to be clarified; it doesn't make sense to have two uses of the same attribute so closely aligned in different parts of the label.		POSTPONED				
RFA_Build2c_Beta_128	Rye	Img_01	The Stream_Text class is currently described as defining a "file"; I believe this is incorrect. Doesn't the File class define the file, while the Stream_Text class defines the digital object it contains? (This is in the context of the File_Area_Text.)	Recommend that the documentation for Stream_Text be changed from "The Stream text class defines a text file." to "The Stream text class defines a text object."	IMPLEMENTED				Changed definition of Stream_Text from "The Stream text class defines a text file." to "The Stream text class defines a text object."
RFA_Build2c_Beta_129	Rye	Img_02	Problem: There appears to be some kind of bug in your script which is generating the master Schematron file. There are numerous entries which are duplicated. For example, lines 180-181 are duplicates of 178-179. Similarly, lines 190-193 are duplicates of 186-189.	Fix the bug to remove the duplicate assert statements.	IMPLEMENTED				Fixed bug.

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RFA #	Name	Topic	Problem	Recommendation	Disposition	Timeframe	Comments	Plan	Resolution
RFA_Build2c_Beta_130		Img_03	The Schematron file currently has a very limited list of reference_types for Product_Collection internal references, basically assuming that the collection in question is always a data collection. I'm working with a schema collection label, and there is nothing appropriate in the list.	Recommendation: Add values appropriate to other collections (for example, "schema_collection_to_data").	POSTPONED				
RFA_Build2c_Beta_131		Img_04	There doesn't appear to be any check currently in the master Schematron file to verify uniqueness of local_identifiers within a particular label.	Add a test for uniqueness of local_identifier value within a label.	POSTPONED				
RFA_Build2c_Beta_132		Img_05	We changed "Array_Base" to "Array", but didn't change "Table_Base" to "Table". Why?	Change "Table_Base" to "Table". (Unless this wrecks havoc with the model. I'm hoping that since it's an abstract class, it won't have any impact on existing products.)	CLOSED				
RFA_Build2c_Beta_133		Img_06	ASCII_Date data type is defined simply as xs:string, with the pattern defined as \p{IsBasicLatin}*. This is virtually meaningless.	Define this data type as a union of the ASCII_Date_DOY and ASCII_Date_YMD.	POSTPONED				
RFA_Build2c_Beta_134		Img_07	The ASCII_Date_Time data type is currently defined as the union of ASCII_Date_Time_DOY, ASCII_Date_Time_YMD, ASCII_Date_DOY, and ASCII_Date_YMD. Given that the attribute name specifically includes the word "Time", I believe this is too broad. ASCII_Date is meant to represent the union of the latter two types.	Define ASCII_Date_Time as the union of ASCII_Date_Time_DOY and ASCII_Date_Time_YMD.	POSTPONED				

SUMMARY

OPEN	0
REQUIRES FOLLOW-UP	0
ACCEPTED	0
PENDING	3
IMPLEMENTED	74
DELIVERED	0
CLOSED	44
POSTPONED	14
TOTAL	**135**