

PDS 4 Data Architecture Reprise

PDS 4 Data Architecture Team

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“fewer, simpler structures”

- File storage
 - PDS3
 - implicit data structures
 - rely on descriptions of structures
 - data structure and logical view are not related
 - PDS4
 - explicit data structures
 - rigorously defined structures
 - data structure parallels logical view

“fewer, simpler structures”

- Data Objects
 - PDS3
 - Some fairly complex – 2D, 3D, banded images, variable length records
 - PDS4
 - Probably have more, but simpler, objects
 - Binary_Table and Character_Table
- Recommend changing to:
- “a few, simple structures for data storage and interpretation”

Exercise 1 Sorted by Mean and Std Dev

	ATM	EN	GEO	IMG	NAIF	PPI	RINGS	SBN	Total	Mean	StDev
a available to current community	9	9	10	7	10	9	9	9	72	9.0	0.9
e long term preservation	10	10	3	10	0	10	10	10	63	7.9	4.0
c easy data submission	8	8	5	2	0	3	6	7	39	4.9	2.9
i standards - simple, straightforward, consistent	7	6	6	1	4	0	5	8	37	4.6	2.8
b easy to use (contemporary formats)	4	1	8	6	8	1	7	1	36	4.5	3.2
o Search/retrieve and granularity	6	0	9	0	6	6	8	0	35	4.4	3.8
d preserve in contemporary formats	3	0	7	9	0	8	2	0	29	3.6	3.8
f Enable "one-stop shopping",	5	7	0	5	9	0	0	0	26	3.3	3.7
m Easily extensible/adaptable	0	5	1	0	3	5	4	4	22	2.8	2.1
g deliver derived data products	0	0	4	4	7	4	0	0	19	2.4	2.7
k Improve data transfer, integrity,maintenance	2	3	0	3	1	0	3	3	15	1.9	1.4
j safely and efficiently archived & retrieved	0	0	0	8	0	0	0	6	14	1.8	3.3
n Scalability of capacity	0	2	2	0	2	7	0	0	13	1.6	2.4
l Simplify addition of future user services	0	4	0	0	5	0	0	2	11	1.4	2.1
p Tools (utilities, QA, etc.)	1	0	0	0	0	0	1	5	7	0.9	1.7
q Reporting and accounting	0	0	0	0	0	2	0	0	2	0.3	0.7
h same as c	0	0	0	0	0	0	0	0	0	0.0	0.0
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e long term preservation	10	10	3	10	0	10	10	10	63	7.9	4.0

Exercise 2

Sort by Mean

	10	group -->	1	2	3	4	5	6	7	8	Total	ave	stdev	1
4	Local repositories use one layout		8	8	3	10	8	10	3	7	57	7.1	2.7	Local repositories independent
7	General utilities support all classes		7	7	8	5	7	8	8	5	55	6.9	1.2	Utilities produced by DNs
10	1 PDS		7	8	8	2	4	10	4	7	50	6.3	2.7	Requirement Proliferation
3	Nodes & data location transparent		10	6	4	2	6	10	3	5	46	5.8	3.0	User sees DN not PDS as whole
5	Structures & formats highly rigid		6	7	5	2	6	5	9	5	45	5.6	2.0	High flexibility
9	Cheap, universal software		5	7	8	5	2	7	2	7	43	5.4	2.3	Limited interoperability
1	Objects & elements defined globally		8	7	5	3	6	4	5	4	42	5.3	1.7	Highest-level requirements global
6	Global configuration control		5	8	3	5	1	10	1	4	37	4.6	3.2	Nodes handle configuration control
2	One interface into PDS holdings		5	6	3	3	4	3	2	5	31	3.9	1.4	DNs use independent catalogs
8	No mission or discipline tailoring		4	5	5	2	2	3	2	2	25	3.1	1.4	User-Oriented Service

Sort by Std Dev

	10	group -->	1	2	3	4	5	6	7	8	Total	ave	stdev	1
7	General utilities support all classes		7	7	8	5	7	8	8	5	55	6.9	1.2	Utilities produced by DNs
2	One interface into PDS holdings		5	6	3	3	4	3	2	5	31	3.9	1.4	DNs use independent catalogs
8	No mission or discipline tailoring		4	5	5	2	2	3	2	2	25	3.1	1.4	User-Oriented Service
1	Objects & elements defined globally		8	7	5	3	6	4	5	4	42	5.3	1.7	Highest-level requirements global
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3	Nodes & data location transparent		10	6	4	2	6	10	3	5	46	5.8	3.0	User sees DN not PDS as whole
6	Global configuration control		5	8	3	5	1	10	1	4	37	4.6	3.2	Nodes handle configuration control
	total		65	69	52	39	46	70	39	51	431	53.9	12.7	

