

Initial Pipeline Assignment Procedure (The SIRTf “Pipeline Picker”)

F. Masci , 6/17/2003

I. Overview

This document outlines the method by which a given DCE in a given exposure and request (AOR, IER or SER) is assigned a pipeline thread to initiate processing. It was developed by J. Rector, J. Jacobson and R. Laher. Once the *SODB:Dces* table is augmented with a new DCE entry, the “pipeline picker” routine is triggered to uniquely determine an appropriate pipeline script-ID (*plScriptId*) from a look-up-table called: *SODB:PlScripts* (attached at the end of this document). With the constraint that the attribute *SODB:PlScripts.initialScript* value is set to ‘ t ’ (true), the following database parameters for the DCE in question are used to perform this query:

SODB:Dces.instrumentId, (*instrumentId* = 1, 2 or 3 for “IRSX”, “IRAC” or “MIPS” respectively)
SODB:Exposures.exposureType,
SODB:Exposures.readoutMode,
SODB:Dces.chanNum,
SODB:Exposures.aperture

Given a “correct” and unique combination for these values in the *SODB:PlScripts* table, the *plScriptId* is returned and inserted in the *initPlScriptId* field of the *SODB:Dces* table. Once data has been downlinked and ingested, the Automated Pipeline Executive for SIRTf (APES) takes over, commencing processing with the thread defined by *initPlScriptId*. Thereafter, all associated post-processing threads defined as “non-initial” threads in the *SODB:PlScripts* table are conditionally run. These are defined with the *SODB:PlScripts* table attribute: *SODB:PlScripts.initialScript* = ‘ f ’ (false). The pipeline picker will never assign a DCE with a thread having *SODB:PlScripts.initialScript* = ‘ f ’.

II. Method

The matrix below shows the operation sequence used by the pipeline picker to search for a unique match of various combinations of the above five database parameters with entries in the *SODB:PlScripts* table. The constraint *SODB:PlScripts.initialScript* = ‘ t ’ is enforced in each search. The search order is from top-down and involves seven stages labeled in the first column.

Stage#	instrument	exposureType	readoutMode	chanNum	aperture
1	T	T	T	T	T
2	T	T	T	T	NULL
3	T	T	T	NULL	NULL
4	T	T	NULL	T	NULL
5	T	T	NULL	NULL	NULL
6	T	zip	NULL	T	NULL
7	T	zip	NULL	NULL	NULL

T = Value in database *matches* value in *SODB:PlScripts* table

NULL = Value in *SODB:plScripts* table is forced to match “null”.

zip = Value in *SODB:PlScripts* table is tested to match “zip” exactly, i.e. the “pipe-zero” thread.

- The *plScriptId* corresponding to the *first* set of criteria which are satisfied (from stages 1 → 7) will be returned and loaded into *SODB:Dces.initPlScriptId*. Other stages lower in the hierarchy are skipped.
- If *no unique* match is found in the *SODB:PlScripts* table after the above operation sequence, a value of “-1” is inserted in the *SODB:Dces.initPlScriptId* field and no pipeline thread can process that DCE.

p1ScriptID	Instrument	ChanNum	exposureType	readoutMode	aperture	initialScript	archive	p1ScriptNum	p1ScriptType	productType	highPerformance	followOnP1ScriptID	fileExtension	productSize	comment
1	IRAC	null	drk	null	null	t	t	101	null	cal	f	null	fits	1234	IRAC Darkcal pre-processing thread
2	IRAC	null	drk	null	null	f	f	141	2	cal	t	null	fits	null	IRAC Darkcal ensemble-processing thread
3	IRAC	null	lin	null	null	f	f	102	null	cal	f	null	fits	null	IRAC Lincal pre-processing thread
4	IRAC	null	lin	null	null	f	f	142	2	cal	t	null	fits	null	IRAC Lincal Quadratic-Model ensemble-processing thread
5	IRAC	null	lin	null	null	f	f	142	45	cal	t	null	fits	null	IRAC Lincal Cubic-Model ensemble-processing thread
6	IRAC	null	flt	null	null	t	t	103	null	cal	f	null	fits	null	IRAC Sky Flatfield pre-processing thread
7	IRAC	null	flt	null	null	f	f	143	2	cal	t	null	fits	null	IRAC Sky Flatfield ensemble-processing thread
8	IRAC	null	tei	null	null	f	f	143	122	cal	t	null	fits	null	IRAC Transmission-Calibrator Illumination-pattern ensemble-processing thread
9	IRAC	null	ttf	null	null	f	f	143	123	cal	t	null	fits	null	IRAC Transmission-Calibrator Flatfield ensemble-processing thread
10	IRAC	null	pgf	null	null	f	f	105	2	cal	t	null	fits	null	IRAC Pixel Gain/Read-Noise pre-processing thread
11	IRAC	null	pgf	null	null	f	f	145	2	cal	t	null	fits	null	IRAC Pixel Gain/Read-Noise ensemble-processing thread
12	IRAC	null	mgr	null	null	f	f	106	2	cal	f	null	fits	null	IRAC Readout-Channel Gain/Read-Noise pre-processing thread
13	IRAC	null	mgr	null	null	f	f	146	2	cal	t	null	fits	null	IRAC Readout-Channel Gain/Read-Noise ensemble-processing thread
14	IRAC	null	hddrk	null	null	t	t	104	null	cal	f	null	fits	1234	IRAC HDR Darkcal pre-processing thread
15	IRAC	null	mgr	null	null	f	f	146	132	cal	t	null	fits	null	IRAC Readout-Channel Gain ensemble-processing thread
16	IRAC	null	hdfilt	null	null	t	t	105	null	cal	f	null	fits	null	IRAC HDR Sky Flatfield pre-processing thread
17	IRAC	null	sci	null	null	t	f	107	null	bed	f	19	fits	null	IRAC Science thread
18	IRAC	null	hdsci	null	null	t	f	108	null	bed	f	19	fits	null	IRAC HDR Science thread
19	IRAC	null	ptg	null	null	f	t	111	2	bed	f	19	fits	null	IRAC Pointing-transfer thread
21	IRAC	null	hdr	null	null	f	f	120	2	bed	f	19	fits	null	IRAC High-Dynamic-Range thread
23	IRAC	null	lat	null	null	f	t	122	2	bed	t	19	fits	null	IRAC Latent-Image-Reporting thread
25	IRAC	null	reffr	null	null	f	t	130	2	bgd	f	null	fits	1	BQD Fiducial Image Frame thread
26	IRAC	null	spose	null	null	f	f	131	2	bgd	f	19	fits	null	BQD Single Frame Point Source Extraction thread
27	IRAC	null	reffin	null	null	f	f	132	2	bgd	t	null	fits	null	BQD Overlap Consistency and Pointing Refinement thread
28	IRAC	null	intprp	null	null	f	f	133	2	bgd	f	19	fits	null	BQD Interpolation thread
29	IRAC	null	rhrfin	null	null	f	f	134	2	bgd	t	null	fits	null	BQD Multiframe Outlier Detection thread
30	IRAC	null	rsmak	null	null	f	f	135	2	bgd	f	19	fits	150	BQD Mask Building thread
31	IRAC	null	coad	null	null	f	t	136	2	bgd	t	null	fits	500000	BQD Coaddition and Multiframe Point Source Extraction thread
32	IRAC	null	bmerg	null	null	f	t	137	2	bgd	t	null	fits	null	BQD Bandmerge thread
33	IRAC	null	mrefi	null	null	f	t	138	2	bgd	t	null	fits	1	BQD Pointing Refinement
34	IRAC	null	mopex	null	null	f	t	139	2	bgd	t	null	fits	500000	BQD Mosaic and Point Source Extraction thread
1000	MIPS	1	d1	SUR	null	t	f	401	null	cal	f	null	fits	null	MIPS:S1 SUR-Mode Darkcal pre-processing thread
1001	MIPS	1	d1	SUR	null	t	f	402	2	cal	t	null	fits	288000	MIPS:S1 SUR-Mode Darkcal ensemble-processing thread
1005	MIPS	1	d1	RAW	null	f	f	407	null	cal	f	null	fits	null	MIPS:S1 RAW-Mode Darkcal pre-processing thread
1006	MIPS	1	d1	RAW	null	f	f	408	null	cal	f	null	fits	4911000	MIPS:S1 RAW-Mode Darkcal ensemble-processing thread
1010	MIPS	1	l1	RAW	null	t	f	403	null	cal	f	null	fits	null	MIPS:S1 RAW-Mode Lincal pre-processing thread
1011	MIPS	1	l1	RAW	null	t	f	409	2	cal	t	null	fits	500000	MIPS:S1 RAW-Mode Lincal Quadratic-Model ensemble-processing thread
1015	MIPS	1	f1	SUR	null	t	f	404	null	cal	f	null	fits	null	MIPS:S1 SUR-Mode Flatfield pre-processing thread
1016	MIPS	1	f1	SUR	null	t	f	410	null	cal	t	null	fits	961000	MIPS:S1 SUR-Mode Flatfield ensemble-processing thread
1020	MIPS	1	scn	SUR	null	t	f	405	null	bed	f	1030	fits	750000	MIPS:S1 SUR-Mode Science thread
1021	MIPS	1	pht	SUR	null	t	f	405	null	bed	f	1030	fits	750000	MIPS:S1 SUR-Mode Science thread
1025	MIPS	1	rsc	RAW	null	t	f	406	null	bed	f	1030	fits	904000	MIPS:S1 RAW-Mode Science thread
1026	MIPS	1	rpn	RAW	null	t	f	406	null	bed	f	1030	fits	904000	MIPS:S1 RAW-Mode Science thread
1030	MIPS	null	ptg	null	null	f	t	111	2	bed	f	null	fits	904000	MIPS:S1 Pointing-transfer thread
1035	MIPS	1	lat	SUR	null	f	f	411	2	bed	t	null	fits	null	MIPS:S1 Latent-Image-Reporting thread
1040	MIPS	null	reffr	null	null	f	t	130	2	bgd	f	null	fits	1	BQD Fiducial Image Frame thread
1041	MIPS	null	spose	null	null	f	t	131	2	bgd	f	null	fits	1	BQD Single Frame Point Source Extraction thread
1042	MIPS	null	reffin	null	null	f	t	132	2	bgd	t	null	fits	1	BQD Pointing Refinement
1043	MIPS	null	intprp	null	null	f	f	133	2	bgd	f	null	fits	null	BQD Interpolation thread
1044	MIPS	null	rhrfin	null	null	f	f	134	2	bgd	t	null	fits	null	BQD Multiframe Outlier Detection thread
1045	MIPS	null	rsmak	null	null	f	f	135	2	bgd	f	null	fits	150	BQD Mask Building thread
1046	MIPS	null	coad	null	null	f	t	136	2	bgd	t	null	fits	500000	BQD Coaddition and Multiframe Point Source Extraction thread
1047	MIPS	null	bmerg	null	null	f	t	137	2	bgd	t	null	fits	null	BQD Bandmerge thread
1048	MIPS	null	mopex	null	null	f	t	139	2	bgd	t	null	fits	500000	BQD Mosaic and Point Source Extraction thread
1500	MIPS	2	scn	SUR	null	t	f	301	null	bed	f	1600	fits	1600	MIPS:G2 Science pre-processing thread
1501	MIPS	2	pht	SUR	null	t	f	302	null	bed	f	1601	fits	1601	MIPS:G2 Science pre-processing thread
1508	MIPS	2	pht	SUR	null	t	f	302	null	bed	f	1608	fits	1608	MIPS:G2 Science pre-processing thread
1509	MIPS	2	pht	SUR	null	t	f	301	null	bed	f	1609	fits	1609	MIPS:G2 Science pre-processing thread
1510	MIPS	2	pht	SUR	null	t	f	301	null	bed	f	1610	fits	1610	MIPS:G2 Science pre-processing thread
1511	MIPS	2	pht	SUR	112	t	f	301	null	bed	f	1611	fits	1611	MIPS:G2 Science pre-processing thread
1512	MIPS	2	pht	SUR	115	t	f	301	null	bed	f	1612	fits	1612	MIPS:G2 Science pre-processing thread
1513	MIPS	2	scn	SUR	null	t	f	302	null	bed	f	1613	fits	1613	MIPS:G2 Science pre-processing thread
1514	MIPS	2	pht	SUR	111	t	f	302	null	bed	f	1614	fits	1614	MIPS:G2 Science pre-processing thread
1515	MIPS	2	pht	SUR	112	t	f	302	null	bed	f	1615	fits	1615	MIPS:G2 Science pre-processing thread
1516	MIPS	2	pht	SUR	112	t	f	302	null	bed	f	1616	fits	1616	MIPS:G2 Science pre-processing thread
1517	MIPS	2	pht	SUR	115	t	f	302	null	bed	f	1617	fits	1617	MIPS:G2 Science pre-processing thread
1518	MIPS	2	pht	SUR	118	t	f	302	null	bed	f	1618	fits	1618	MIPS:G2 Science pre-processing thread
1519	MIPS	2	pht	SUR	119	t	f	302	null	bed	f	1619	fits	1619	MIPS:G2 Science pre-processing thread
1520	MIPS	2	pht	SUR	118	t	f	301	null	bed	f	1620	fits	1620	MIPS:G2 Science pre-processing thread
1521	MIPS	2	pht	SUR	119	t	f	301	null	bed	f	1621	fits	1621	MIPS:G2 Science pre-processing thread
1522	MIPS	2	pht	SUR	120	t	f	301	null	bed	f	1622	fits	1622	MIPS:G2 Science pre-processing thread
1523	MIPS	2	pht	SUR	124	t	f	301	null	bed	f	1623	fits	1623	MIPS:G2 Science pre-processing thread
1524	MIPS	2	pht	SUR	127	t	f	301	null	bed	f	1624	fits	1624	MIPS:G2 Science pre-processing thread
1525	MIPS	2	pht	SUR	120	t	f	302	null	bed	f	1625	fits	1625	MIPS:G2 Science pre-processing thread
1526	MIPS	2	pht	SUR	124	t	f	302	null	bed	f	1626	fits	1626	MIPS:G2 Science pre-processing thread
1527	MIPS	2	pht	SUR	127	t	f	302	null	bed	f	1627	fits	1627	MIPS:G2 Science pre-processing thread
1530	MIPS	2	tpm	SUR	null	t	f	301	null	bed	f	1630	fits	1630	MIPS:G2 Science TPM pre-processing thread
1531	MIPS	2	tf1	SUR	null	t	f	301	null	bed	f	1630	fits	1630	MIPS:G2 Science TPM pre-processing thread
1540	MIPS	2	d2a	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1541	MIPS	2	d2b	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1550	MIPS	2	f2a	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1551	MIPS	2	f2b	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1553	MIPS	2	fe	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1554	MIPS	2	pf1	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1555	MIPS	2	sf1	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1556	MIPS	2	df1	SUR	null	t	f	301	null	cal	f	1640	fits	1640	MIPS:G2 Darkcal pre-processing thread
1570	MIPS	2	sed	SUR	113	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1571	MIPS	2	sed	SUR	111	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1572	MIPS	2	sed	SUR	116	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1573	MIPS	2	sed	SUR	117	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1574	MIPS	2	sed	SUR	121	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1575	MIPS	2	sed	SUR	121	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1576	MIPS	2	sed	SUR	123	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1577	MIPS	2	sed	SUR	125	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1578	MIPS	2	sed	SUR	126	t	f	301	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1580	MIPS	2	se2	SUR	127	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1581	MIPS	2	ca1	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1582	MIPS	2	sf1	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1583	MIPS	2	dpm	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1584	MIPS	2	p2a	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1585	MIPS	2	p2b	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1586	MIPS	2	s2a	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1587	MIPS	2	s2b	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1588	MIPS	2	bc2	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1589	MIPS	2	bc3	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1590	MIPS	2	d7r	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1591	MIPS	2	d7l	SUR	null	t	f	300	null	bed	f	1640	fits	1640	MIPS:G2 Science pre-processing thread
1600	MIPS	2	scn	SUR	null	f	f	311	2	bed	t	1900	fits	1900	MIPS:G2 Science SCN ensemble-processing thread
1601	MIPS	2	pht	SUR	null	f	f								

2115	IRSX null	anl	RAW	null	t	f	209	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2120	IRSX null	chb	RAW	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2125	IRSX null	scm	RAW	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2200	IRSX null	drk	null	null	t	f	205	null	cal	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2205	IRSX null	spi	null	null	t	f	205	null	cal	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2210	IRSX null	spf	null	null	t	f	205	null	cal	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2215	IRSX null	sp	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2230	IRSX null	sap	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2235	IRSX null	pke	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2240	IRSX null	pks	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2245	IRSX null	pki	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2250	IRSX null	pkf	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2255	IRSX null	pk1	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2260	IRSX null	wup	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2265	IRSX null	sfx	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2270	IRSX null	psf	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2275	IRSX null	pfx	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2280	IRSX null	lat	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2285	IRSX null	sc1	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2290	IRSX null	wav	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2295	IRSX null	frg	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2300	IRSX null	str	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2305	IRSX null	pkx	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2310	IRSX null	stm	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2315	IRSX null	anl	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2320	IRSX null	chb	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
2325	IRSX null	scn	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead
5000	IRAC null	zip	null	null	t	f	123	null	bed	f	19	fits null	IRAC abbreviated BCD thread: runs only cvt12r4 and tranhead
5001	MIPS 1	zip	null	null	t	f	412	null	bed	f	1030	fits 340000	MIPS:S1 abbreviated BCD thread: runs only cvt12r4 and tranhead
5002	MIPS 2	zip	null	null	t	f	300	null	bed	f	1900	fits null	MIPS:Ge abbreviated BCD thread: runs only cvt12r4 and tranhead
5003	MIPS 3	zip	null	null	t	f	300	null	bed	f	1920	fits null	MIPS:Ge abbreviated BCD thread: runs only cvt12r4 and tranhead
5004	IRSX null	zip	null	null	t	f	205	null	bed	f	2017	fits null	IRS abbreviated BCD thread: runs only cvt12r4 and tranhead