Traceability Matrix, PPS Proposal Instructions

Chapter 19: MIRI Engineering

Requirement #	Proposal, Visit, Exposure	Comment
19.1 Introduction		
Dark		
MIR0130	605 01	Dark Engineering Template exists
MIR0322	605 01	Field: Detector
MIR0131	605 01	Detector, choose from list
MIR0323	605 01.01	Field: Number of Exposures
MIR0132	605 01.01	Number of Exposures, specify number
MIR0268	605 01	Field: Subarray
MIR0074	605 01	Subarray, choose from list
MIR0326	605 01.01	Field: Readout Pattern
MIR0135	605 01.01	Readout Pattern, choose SLOW or FAST
	605 01.01	Field: Number of Groups
	605 01.01	Number of Groups, specify number
MIR0458	605 02.01	Field: Number of Groups Long
MIR0459	605 02.01	Number of Groups Long, specify number
MIR0460	605 02.01	Field: Number of Groups Short
MIR0461	605 02.01	Number of Groups Short specify number
	605 01.01	Field: Number of Integrations
	605 01.01	Number of Integrations, specify number
MIR0080	605 02.01	Field: Number of Integrations Long
MIR0081	605 02.01	Number of Integrations Long, specify number
MIR0082	605 02.01	Field: Number of Integrations Short
MIR0083	605 02.01	Number of Integrations Short, specify number
Imager Flat		
MIR0136	606 01	Imager Internal Flats Template exists
MIR0538	606 01	Field: Target Name
MIR0539	606 01	Target Name, choose from list
MIR0540	606 01	Field: Gaussian Dither
MIR0541	606 01	Gaussian Dither, YES or NO (True or False in gui)
	606 01	Field: Subpixel Sampling (not yet in PropInst)
	606 01	Subpixel Sampling, YES or NO (not yet in PropInst)
MIR0542	606 01	Field: Lamp Use
MIR0543	606 01	Lamp Use, ON ONLY or OFF THEN ON
MIR0328	606 1.01	Field: Filter
MIR0138	606 1.01	Filter, choose from list
MIR0553	606 1.01	Field: Number of Groups
MIR0554	606 1.01	Number of Groups, specify number
MIR0329	606 1.01	Field: Number of Integrations
MIR0139	606 1.01	Number of Integrations, specify number
MRS Flat		
MIR0140	607 01	MRS Internal Flats Template exists
MIR0544	607 01	Field: Target Name
MIR0545	607 01	Target Name, choose from list
MIR0546	607 01	Field: Gaussian Dither
MIR0547	607 01	Gaussian Dither, YES or NO
	607 01	Field: Subpixel Sampling (not yet in PropInst)

	607 01	Subpixel Sampling, YES or NO (not yet in PropInst)
MIR0548	607 01	Field: Lamp Use
MIR0549	607 01	Lamp Use, ON ONLY or OFF THEN ON
MIR0331	607 01.01	Field: Wavelength1&4
MIR0142	607 01.01	Wavelength1&4, choose from list
MIR0330	607 01.01	Field: Wavelength2&3
MIR0141	607 01.01	Wavelength2&3, choose from list
MIR0324	607 01.01	Field: Number of Groups Long
MIR0325	607 01.01	Number of Groups Long, specify number
MIR0133	607 01.01	Field: Number of Groups Short
MIR0134	607 01.01	Number of Groups Short specify number
MIR0555	607 01.01	Field: Number of Integrations Long
MIR0556	607 01.01	Number of Integrations Long, specify number
MIR0332	607 01.01	Field: Number of Integrations Short
MIR0143	607 01.01	Number of Groups Integrations specify number
Anneal		
MIR0144	608 01	Anneal Template exists
MIR0333	608 01	Field: Detector
MIR0145	608 01	Detector, choose from list
Coronagraphic Photometric Calibration		
MIR0327	610 1	Coronagraphic Photometric Calibration Template exists
MIR0137	610 1	Field: Target Name
MIR0269	610 1	Target Name, choose from list
MIR0075	610 1	Field: Pattern Size
MIR0273	610 1	Pattern Size, choose from list
MIR0079	610 1	Field: Subpixel Sampling
MIR0439	610 1	Subpixel Sampling, YES or NO
MIR0440	610 1	Field: Subarray
MIR0441	610 1	Subarray, choose from list
MIR0442	610 1	Field: Filter(s)
MIR0084	610 1	Filter(s), choose from list
MIR0472	610 1	Field: Readout Pattern
MIR0473	610 1	Readout Pattern, choose SLOW or FAST
MIR0085	610 1	Field: Number of Groups
MIR0086	610 1	Number of Groups, specify number
MIR0097	610 1	Field: Number of Integrations
MIR0337	610 1	Number of Integrations, specify number
19.2 Dark		
MIR0146	move?	Dark can be parallel to normal science observation
19.2.1 Detector		
MIR0147	605 01	IMAGER
MIR0148	605 02	MRS
MIR0334	605 01,02	Darks can specify one or more combos of parameters
19.2.2 Number of Exposures		
MIR0149	605 01.01	NUMBER OF EXPOSURES
19.2.3 Subarray		
MIR0098	605 3	FULL
MIR0099	605 4	BRIGHTSKY
MIR0295	605 5	SUB256
MIR0296	605 6	SUB128
MIR0297	605 7	SUB64
MIR0474	605 8	SUBPRISM
MIR0475	605 9	MASK550

MIR0476	605 10	MASK1140
MIR0477	605 11	MASK1065
MIR0478	605 12	MASKLYOT
MIR0479	605 13	Only valid for DETECTOR=IMAGER (i.e. MRS doesn't have)
13.2.4 Exposure Duration		
MIR0150	605 01	Following parameters define dark exposure
13.2.4.1 Readout Pattern		
MIR0153	605 01.01	SLOW
MIR0154	605 01.07	FAST
MIR0456	605 14.01	FASTGRPAVG
MIR0457	605 14.02	FASTINTAVG
19.2.4.2 Number of Groups		
MIR0151	605 01.01	NUMBER OF GROUPS (IMAGER)
MIR0479	605 02.01	NUMBER OF GROUPS LONG (MRS)
MIR0100	605 02.01	NUMBER OF GROUPS SHORT (MRS)
MIR0101	903 15.01 16.01	FASTGRPAVG, NUMBER OF GROUPS > 16
MIR0102	903 15.02 16.02	FASTGRPAVG, NUMBER OF GROUPS multiple of 4
MIR0480	903 15.03 16.03	FASTINTAVG, NUMBER OF GROUPS = 1
19.2.4.3 Number of Interations		
MIR0152	605 01.01	NUMBER OF INTERGRATIONS (IMAGER)
MIR0481	605 02.01	NUMBER OF INTEGRATIONS LONG (MRS)
MIR0482	605 02.01	NUMBER OF INTEGRATIONS SHORT (MRS)
MIR0483	903 15.04 16.04	FASTINTAVG, NUMBER OF INTEGRATIONS multiple of 4
MIR0103	903 16.05	NoInt(Long)*NoGrp(Long)=NoInt(Short)*NoGrp(Short) (MRS)
19.3 Imager Flat		
MIR0155		Imager Internal Flat cannot be a parallel to normal science observatio
MIR0156		Imager Internal Flat can be in parallel with slews
MIR0550	606 20	Can't be in parallel with slews when LAMP USE=OFF THEN ON visit.schedule_as_parallel=N, visit.slew_only_parallel=N (Targ NONE & GAUSSIAN DITHER=NO)
MIR0551	606 23	Can't be in parallel with slews when TARGET NAME specified visit.schedule_as_parallel=N, visit.slew_only_parallel=NO (ON ONLY and GAUSSIAN DITHER=NO)
MIR0552	606 02	Can't be in parallel with slews when GAUSSIAN DITHER=YES visit.schedule_as_parallel=N, visit.slew_only_parallel=N (Target NONE and ON ONLY)
19.3.1 Target Name		
MIR0557	606 01 606 21	Target Name NONE external target
19.3.2 Dither Pattern		
MIR0558	606 01	YES
MIR0559	606 03	NO
MIR0560	606 01	if YES 5 point Gaussian large dither will be used
MIR0561	606 01	yes populate dither_id on exposure spec table
	606 01	Subpixel Sampling YES
	606 19	Subpixel Sampling NO
19.3.3 Lamp Use		
MIR0562	606 02	ON ONLY
MIR0563	606 01	OFF THEN ON
MIR0564	606 01	if OFF THEN ON prompted for numint for OFF then ON exposures
MIR0565	606 02	ON ONLY -> miri_exposure_specifiation.lamp_power ON
MIR0566	606 01	OFF THEN ON populate all OFF first then all ON exposures
19.3.4 Filters		

MIR0567	606 01.01,02	for each filter specify filter and exposure parameters
19.3.4.1 Filter		
MIR0162	606 03.01	F560W
MIR0163	606 04.01	F770W
MIR0164	606 05.01	F1000W
MIR0165	606 06.01	F1065C
MIR0166	606 07.01	F1130W
MIR0167	606 08.01	F1140C
MIR0168	606 09.01	F1280W
MIR0169	606 10.01	F1500W
MIR0170	606 11.01	F1550C
MIR0171	606 12.01	F1800W
MIR0172	606 13.01	F2100W
MIR0173	606 14.01	F2300C
MIR0174	606 15.01	F2550W
MIR0175	606 16.01	F2550WR
MIR0342	606 18.01	FND
MIR0176	606 17.01	P750L
MIR0177	no req	F560W: Max # of integrations
MIR0178	no req	F770W: Max # of integrations
MIR0179	no req	F1000W: Max # of integrations
MIR0180	no req	F1065C: Max # of integrations
MIR0181	no req	F1130W: Max # of integrations
MIR0182	no req	F1140C: Max # of integrations
MIR0183	no req	F1280W: Max # of integrations
MIR0184	no req	F1500W: Max # of integrations
MIR0185	no req	F1550C: Max # of integrations
MIR0186	no req	F1800W: Max # of integrations
MIR0187	no req	F2100W: Max # of integrations
MIR0188	no req	F2300C: Max # of integrations
MIR0189	no req	F2550W: Max # of integrations
MIR0190	no req	F2550WR: Max # of integrations
MIR0343	no req	FND: Max # of integrations
MIR0191	no req	P750L: Max # of integrations
19.3.4.2 Number of Groups		
MIR0568	606 02.01	Field: Number of Groups
MIR0569	903 29.01	default 4
MIR0570	606 20.03	if < 4, stern warning should be issued
19.3.4.3 Number of Interations		
MIR0192	606 02.01	Field: Number of integrations
MIR0193	no req	Max number based on table above
MIR0571	606 01.01	SUBARRAY=FULL, READOUT PATTERN=FAST (see .times rpt)
19.4 MRS Flat		
MIR0194		MRS Internal Flat cannot be a parallel to normal science observations
MIR0195		MRS Internal Flat can be in parallel with slews
MIR0572	607 05	Can't be in parallel with slews when LAMP USE=OFF THEN ON visit.schedule_as_parallel=N, visit.slew_only_parallel=N (Targ NONE & GAUSSIAN DITHER=NO)
MIR0573	607 06	Can't be in parallel with slews when TARGET NAME specified visit.schedule_as_parallel=N, visit.slew_only_parallel=NO (ON ONLY and GAUSSIAN DITHER=NO)
MIR0574	607 03	Can't be in parallel with slews when GAUSSIAN DITHER=YES visit.schedule_as_parallel=N, visit.slew_only_parallel=N (Target NONE and ON ONLY)

19.4.1 Target Name		
		Target Name
	607 01	NONE
MIR0575	607 06	external target
19.4.2 Dither Pattern		
MIR0576	607 02	YES
MIR0577	607 01	NO
MIR0578	607 02	if YES 5 point Gaussian large dither will be used
MIR0579	607 02	yes populate dither_id on exposure spec table
	607 03	Subpixel Sampling YES
	607 02	Subpixel Sampling NO
19.4.3 Lamp Use		
MIR0580	607 01	ON ONLY
MIR0581	607 02	OFF THEN ON
MIR0582	607 02	if OFF THEN ON prompted for numint for OFF then ON exposures
MIR0583	607 01	ON ONLY -> miri_exposure_specifiation.lamp_power ON
MIR0584	607 02	OFF THEN ON populate all OFF first then all ON exposures
19.4.4 Wavelengths		
MIR0585	607 01.01	for each wavelength pair specify wavelength regions & exp params
19.4.4.1 Wavelength		
MIR0200	607 2	WAVELENGTH1&4 SHORT
MIR0201	607 1	WAVELENGTH1&4 MEDIUM
MIR0202	607 4	WAVELENGTH1&4 LONG
MIR0196	607 2	WAVELENGTH2&3 SHORT
MIR0197	607 3	WAVELENGTH2&3 MEDIUM
MIR0198	607 1	WAVELENGTH2&3 LONG
MIR0203	no req	SHORT: Max # of integrations
MIR0204	no req	MEDIUM: Max # of integrations
MIR0205	no req	LONG: Max # of integrations
19.4.4.2 Number of Groups		
MIR0586	607 01.01	NUMBER OF GROUPS LONG
MIR0587	903 30.01	default 4
MIR0588	607 01.01	NUMBER OF GROUPS SHORT
MIR0589	903 30.01	default 4
MIR0590	607 05.01	if < 4, stern warning should be issued
19.4.4.3 Number of Integrations		
MIR0206	607 1	NUMBER OF INTEGRATIONS LONG
MIR0207	607 1	NUMBER OF INTEGRATIONS SHORT
MIR0591	607 01.01	SUBARRAY=FULL, READOUT PATTERN=FAST (see .times rpt)
19.5 Anneal		
MIR0208	move?	Anneal can be a parallel to normal science observations.
19.5.1 Detector		
MIR0209	608 01	IMAGER
MIR0210	608 02	MRSLONG
MIR0211	608 03	MRSSHORT
19.6 Wavelength Calibration		
19.7 Coronagraphic Photometric Calibration		
Points of Light positions		
MIR0491	610 1	entire dither pattern will be executed
MIR0278	610 2	MASK1065 1
MIR0279	610 2	MASK1065 2
MIR0280	610 2	MASK1065 3
MIR0281	610 2	MASK1065 4

MIR0484	610 3	MASK1140 1
MIR0485	610 3	MASK1140 2
MIR0486	610 3	MASK1140 3
MIR0487	610 3	MASK1140 4
MIR0282	610 1	MASK1550 1
MIR0283	610 1	MASK1550 2
MIR0284	610 1	MASK1550 3
MIR0285	610 1	MASK1550 4
MIR0286	610 4	MASKLYOT 1
MIR0488	610 4	MASKLYOT 2
MIR0489	610 4	MASKLYOT 3
MIR0490	610 4	MASKLYOT 4
MIR0287	610 1	no further mosaic parameters allowed
MIR0288	610 1	NO PARALLEL created by default
MIR0289	610 4	NO PARALLEL can be removed by user
19.7.1 Target Name		
MIR0010	610 1	TARGET NAME: choose from list of available targets
19.7.2 Dither Pattern		
MIR0490	610 1	Gaussian dither pattern executed at each of the points of light
19.7.2.1 Pattern Size		
MIR0290	610 2	DEFAULT
MIR0291	610 1	SMALL
MIR0292	610 3	MEDIUM
MIR0448	610 2.01	FND: DEFAULT -> MEDIUM
MIR0449	610 2.02	F100W: DEFAULT -> MEDIUM
MIR0305	610 2.03	F1500W: DEFAULT -> MEDIUM
MIR0306	610 2.04	F560W: DEFAULT -> MEDIUM
MIR0307	610 2.05	F1065C: DEFAULT -> MEDIUM
MIR0127	610 5.01	F1140C: DEFAULT -> MEDIUM
MIR0128	610 6.01	F1550C: DEFAULT -> MEDIUM
MIR0308	610 4.05	F2300C: DEFAULT -> MEDIUM
19.7.2.2 Subpixel Sampling		
MIR0113	610 1	YES
MIR0114	610 3	NO
19.7.3 Subarray		
MIR0309		
MIR0310	610 3	MASK1140
MIR0311	610 2	MASK1065
MIR0312	610 4	MASKLYOT
MIR0386	610 1	multiple filters allowed for single SUBARRAY
MIR0313	610 2.01	MASK1065:FND
MIR0314	610 2.02	F1000W
MIR0315	610 2.03	F1500W
MIR0316	610 2.04	F560W
MIR0317	610 2.05	F1065C
MIR0318	610 3.01	MASK1140: FND
MIR0319	610 3.02	F1000W
MIR0054	610 3.03	F1500W
MIR0265	610 3.04	F560W
MIR0266	610 3.05	F1140C
MIR0267	610 1.01	MASK1550: FND
MIR0066	610 1.02	F1000W
MIR0067	610 1.03	F1500W
MIR0068	610 1.04	F560W

MIR0069	610 1.05	F1550C
MIR0248	610 4.01	MASKLYOT: FND
MIR0249	610 4.02	F1000W
MIR0250	610 4.03	F1500W
MIR0251	610 4.04	F560W
MIR0252	610 4.05	F2300C
19.7.4 Filters		
MIR0253	610 1	specify filter and exposure parameters for each filter
19.7.4.1 Filter Name		
19.7.4.2 Readout Pattern		
MIR0254	610 1.02	SLOW
MIR0255	610 1.01	FAST
19.7.4.3 Number of Groups		
MIR0256	610 1.01	NUMBER OF GROUPS
19.7.4.4 Number of Integrations		
MIR0257	610 1.01	NUMBER OF INTEGRATIONS

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