APPENDIX 1
PROGRAMMATIC GROUNDRULES AND ASSUMPTIONS

Flight Rate and Crew Rotation Overview

- 6 person capability already established onboard ISS
- Maintain 4 Soyuz, 5 Progress, 1 ATV, and 1 HTV missions per year
- Post Shuttle retirement Crew and cargo transportation rate from 2-4 flights per year
- Flight Rate and Crew Rotation Reference Table

Launch Date	Flt	Delivered Elements
25-May-09	19S	Soyuz-TMA (a) (l)
		Establish Six Person Crew
24-Jun-09	34P	Progress
30-Jul-09	17A	MPLM-P, LMC, Sidewalls (c") (43)
15-Aug-09	5R	Mini-Research Module-2 (MRM2)
01-Sep-09	HTV1	HTV PLC, HTV EP (f)
01-Oct-09	20S	Soyuz-TMA (c) (46)
Oct-09	ULF3	ELC1 (CMG, NTA, Pump Module, ATA, LEE, PCU, BCDU); ELC2 (CMG, NTA, Pump Module, MT/TUS, HPGT, CTC, MISSE-7, FEBO); Sidewall-1 (SASA); Sidewalls-2,3 (MISSE-7A & 7B) -- Rtn: Sidewall-1 (SASA FSE); Sidewalls-2,3 (MISSE 7A & 7B FSE) (b)
Oct-09	35P	Progress
Nov-09	21S	Soyuz (c)
Dec-09	20A	Node 3 w/ Cupola (N3 Avionics Rack-1, N3 Avionics Rack-2)
Dec-09	36P	Progress
Feb-10	37P	Progress
Feb-10	19A	MPLM-P (4 ISPRs (MARES, WORF, MELFI-3, ER7), 2 ZSRs, CQ-4 RSR/RSPs); LMC (ATA); Sidewall-1 (Orion Rel. Nav. Sensors (ff)) -- Rtn: LMC (Empty ATA, SOLAR, RON ORU); Sidewall-1 (Orion Rel. Nav. Sensors (ff))
Mar-10	22S	Soyuz (c)
Apr-10	*ULF4	ICC-VLD (6 Batteries, EOTP, SGANT, SGANT Boom); Mini-Research Module-1 (MRM1) (MLM Radiator, MLM Airlock, PWP, ERA Elbow Spare); Sidewall-1 (PFRAM) -- Rtn: ICC-VLD (6 End-of-Life Batteries, RON ORU); Sidewall-1 (LWAPA)
Apr-10	38P	Progress
May-10	*ULF5	ELC3 (SASA, FHRC, ATA, Utilization (pp), SM MMOD Shields, MMOD Bases); ELC4 (SPDM Arm, 2 CTCs, SASA, SHOSS ED, HPGT); Sidewalls-1,2 (MISSE-7A & 7B FSE); -- Rtn: Sidewalls-1, 2 (MISSE-7A & 7B)
		ISS Assembly Complete
(a) Crew Augmentation Flight		
(b) Crew Rotation Flight (Crew Return Only)		
(c) Crew Rotation Flight		
(c") Split Crew Rotation Flight (Flight Engineer rotation)		
(f) HTV1 launch date will be no earlier than September 1, 2009. Dates are under review.		
(l) Open work to conduct analysis to determine if 19S can occur during the 2J/A mission (simultaneous operations).		
(*) Two Shuttle-equivalent flights for contingency		
(ff) Manifest of Orion Relative Navigation Sensors Experiment (DTO 703) is under review.		
(43) Expedition crew member returns on 19S in strategic timeframe and duration is (4).		

ISS Assembly Complete Configuration Consists of:

- All trusses, solar arrays, and Node 3 with Cupola and a Permanent MPLM (MPLM-P)
- All JAXA, ESA modules and external elements
- Russian MRM-1 launched on Shuttle
- Russian Segment (Non Shuttle launch)
  - Multi-purpose Research Module (MRM-2)
  - Multi-purpose Logistics Module (MLM) with European Robotic Arm (ERA)