IERS Combination Pilot Project: Overview

Institute	Step	Techniques	Resulting Parameters	Period	Additional Info	File names
IDS	1	DORIS	CRD: weekly ERP (pole position): daily	weekly	a) minimum constraints b) combination of 2 or more IDS Analysis Centers	
IGS	1	GPS	CRD: weekly ERP (pole position + rates, LOD): daily	weekly	a) inner constraints b) combination of weekly IGS Analysis Center solutions	
ILRS	1	SLR	CRD: weekly ERP (pole position, LOD): daily	weekly	a) no constraints used b) combination of ILRS Analysis Center solutions	
IVS	1	VLBI	CRD: daily EOP (pole position, UT1-UTC, nutation): daily	24 hours	a) unconstrained normal equations b) combination for each 24-hour session	
AUSLIG	1	VLBI	CRD:daily ERP, ERP rates, nutation	24 hours	a) Kalman Filter technique b) NNR/NNT for TRF; ICRF fixed	
CNES	1	DORIS	CRD: weekly ERP (pole coordinates): daily	weekly	a) minimum constraints b) series of unconstrained solutions	
IGN/JPL	1	DORIS	CRD: weekly EOP: daily	weekly	a) free-network constraints	ignYYDDDwd05.snx.Z
JCET	1	SLR	CRD: weekly ERP (pole position, LOD): daily	weekly	a) loose constraints	
NCL	1	GPS	CRD: weekly ERP (pole position, LOD): daily	weekly	a) minimal constraints b) IGS Associated Analysis Center	
NCL	1	SLR	CRD: weekly ERP (pole position, LOD): daily	weekly	a) minimal constraints b) ILRS pilot project „pos+eop“	
ASI	2	all	CRD; EOP; quasar coordinates		a) weighting based on chi square b) additional site eccentricities c) geocenter as additional parameters (not at the beginning) c) loosely constrained solution (unknown reference frame)	
DGFI	2	all	CRD; EOP (polar motion, UT1/LOD, nutation); quasar coordinates		a) additional Helmert parameters b) variance component estimation	
IGN	2	all	CRD+VEL; EOP (polar motion + rate, UT1/LOD, nutation + rate);		a) additional Helmert and bias parameters b) variance component estimation	
JCET	2	SLR + LEO GPS (starting summer 2004)	CRD; EOP		a) loose constraint solution b) optimal weighting (VCA)	

NCL	2	GPS+SLR	CRD; ERP (pole position, LOD)		a) variance component estimation	
USNO	2	all	EOP (polar motion, UT1, nutation);		a) use of AAM, GPS UT1-like quantity (USNO), GPS calibration b) alignment to C04	
WUH	2	all	CRD; EOP (polar motion, LOD, nutation); quasar coordinates		a) Systematic parameters between techniques b) variance component estimation for weighting	
IGN	3		CRD; EOP (polar motion, UT1/LOD, celestial pole offsets); quasar coordinates		a) reliability + quality of local ties b) comparison with external solutions (ITRF2000, IGS00, IERS and IGS EOP series, AAM, OAM, ICRF) c) weaknesses, model deficiencies, inconsistencies with Conventions	
JCET	3	(starting summer 2004)	CRD; ERP (polar motion, LOD)		a) usage in precise orbit determination b) coordinate comparisons c) spectral analysis of ERPs, comparison with independent series and geophysical signals	
JPL	3		ERP (polar motion, UT1/LOD)		comparison with OAM, AAM	
NCL	3		CRD; ERP (pole coordinates, LOD)		a) residuals of coordinates and ERPs after Helmert transformation b) repeatability of Helmert parameters and station coordinates	
USNO	3		EOP (polar motion, UT1/LOD, nutation)		a) comparison with Bulletin A/B, C04, geophysical fluids, single techniques b) correlation, coherence, power spectrum	
WUH	3		CRD; EOP (polar motion, UT1/LOD, celestial pole offsets); quasar coordinates		a) weighted transformation parameter estimation b) parameters after transformation and transformation parameters	
AICAS	4	GPS+VLBI+SLR+ DORIS	CRD; EOP		a) transformation to the celestial system b) use of covariance matrices	.SNX
GRGS	4	all	TRF; CRF? EOP (UT1, polar motion, nutation corrections)		combination on observation level (same software for all techniques)	
JCET	4	GPS+SLR+DORIS (starting end of 2004)	CRD; EOP; Orbits		as for step 2	
USNO	4	VLBI+GPS+SLR+DORIS	sub-daily ERP		as for step 2	
USNO	4	VLBI+GPS	daily nutation		as for step 2	