Definitions

XP: From external reference to 1PPS in
XO: From 1PPS in to internal reference (i.e. 20 MHz in inverted, delayed by 15.8 ns (Meas 3.1 or 3.3) or 20 MHz out advanced by 2.4 ns (Meas 3.2), first positive zero crossing)
XC, XD: Cables etc... from antenna to receiver (typically XC is long cable, XD is short cable(s) + splitter if needed)
XR: receiver internal delay; XS antenna delay
BIPC values (TM116: June 2002): XR1=281.1 ns; XR2=295.4 ns; XR1+XS1=305.6 ns; XR2+XS2=321.9 ns

Set-up at TL January 2002

	ITRF 97 x	y	z	UTC(TL) to 1PPS in	Meas 3.1 / ns	Meas 3.2 / ns	Ant. Cable / ns
BIPC	x	y	z	37.7 ns XP = 37.7 ns	12.4 Int ref - 1PPSin (XO) = 28.2 ns	Not available	XC=51 ns(local cable); XD = 5.1 ns Short base: XC+XD = 56.1 ns Zero base: XC+XD = 56.1 ns
TL_1	x	y	z	37.8 ns XP = 37.8 ns	(short base: XC = 133.1 ns) Short base: XC+XD = 133.1 ns Zero base: XC+XD = 61.0 ns (incl. 0.7 ns splitter and 9.3 ns cable)	12.5 Int ref - 1PPSin (XO) = 28.3 ns	Not available
TL_2 (TWTF	x	y	z	37.7 ns XP = 37.7 ns	12.4 Int ref - 1PPSin (XO) = 28.2 ns	Not available	rt base: XC = 122.6 ns) Short base: XC+XD = 122.6 ns Zero base: XC+XD = 61.0 ns (incl. 0.7 ns splitter and 9.3 ns cable)

Observations

Short baseline: doy 354-362 (20-28 Dec 2001)
Zero baseline: doy 363-004 (29 Dec 2001-4 Jan 2002)

Measurement results

Preliminary: 18/01/2002 (Z. Jiang)

Short baseline: from Doy 361-362
Delta (-XP-XO+XR1+XC+XD+XS1) (TL_2 - BIPC) = 68.4 ns
Delta (-XP-XO+XR2+XC+XD+XS2) (TL_2 - BIPC) = 62.3 ns

Zero baseline: from Doy 363, 365
Delta (-XP-XO+XR1+XC+XD) (TL_2 - BIPC) = 6.4 ns
Delta (-XP-XO+XR2+XC+XD) (TL_2 - BIPC) = 1.3 ns

Short baseline: from Doy 363, 365
Delta (-XP-XO+XR1+XC+XD+XS1) (TL_1 - BIPC) = 67.6 ns
Delta (-XP-XO+XR2+XC+XD+XS2) (TL_1 - BIPC) = 65.2 ns

Zero baseline: from Doy 361-362
Delta (-XP-XO+XR1+XC+XD) (TL_1 - BIPC) = 7.5 ns
Delta (-XP-XO+XR2+XC+XD) (TL_1 - BIPC) = 2.9 ns

Calibration results

Preliminary: 06/02/2002 (G. Petit), updated 06/05/20003

Short baseline
BIPC: -XP-XO+XR1+XC+XD+XS1 = 295.8 ns
BIPC: -XP-XO+XR2+XC+XD+XS2 = 312.1 ns
TL_2: -XP-XO+XC+XD = 56.7 ns
Therefore
TL_2: XR1+XS1 = 307.5 ns
TL_2: XR2+XS2 = 317.7 ns

Zero baseline
BIPC: -XP-XO+XR1+XC+XD = 271.3 ns
BIPC: -XP-XO+XR2+XC+XD = 285.6 ns
TL_2: -XP-XO+XC+XD = -4.9 ns
Therefore
TL_2: XR1 = 282.6 ns
TL_2: XR2 = 291.8 ns
Therefore
TL_2: XS1 = 24.9 ns
TL_2: XS2 = 26.9 ns

Calibration results

Preliminary: 06/02/2002 (G. Petit), updated 06/05/2003

Short baseline
BIPC: -XP-XO+XR1+XC+XD+XS1 = 295.8 ns
BIPC: -XP-XO+XR2+XC+XD+XS2 = 312.1 ns
TL_1: -XP-XO+XC+XD = 67.0 ns
Therefore
TL_1: XR1+XS1 = 296.4 ns
TL_1: XR2+XS2 = 310.3 ns

Zero baseline
BIPC: -XP-XO+XR1+XC+XD = 271.3 ns
BIPC: -XP-XO+XR2+XC+XD = 285.6 ns
TL_1: -XP-XO+XC+XD = -5.1 ns
Therefore
TL_1: XR1 = 283.9 ns
TL_1: XR2 = 293.6 ns
Therefore
TL_1: XS1 = 12.5 ns
TL_1: XS2 = 16.7 ns