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 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 IEN October 2001

	ITRF 97						
	x	y	z	**Cs Clock to 1PPS in**	**Meas 3.1 / ns**	**Meas 3.2 / ns**	**Ant. Cable / ns**
BIPC	x	y	z	X + 2.7 ns	11.0 / 11.8 / 13.2	29.8 / 30.8 / 32.4	XC=285.0 ns(new cable); XD = 5.1 ns
				XP = X + 2.7 ns	Int ref - 1PPSin (XO) = 27.1 ns (3.1: 26.8; 3.2: 27.4) / 28.0 ns (3.1: Measured on 22 Oct (short base)/ 26 Oct / 29 Oct (zero base)		Short base: XC+XD = 290.1 ns Zero base: XC+XD = 290.1 ns
IENG	x	y	z	X (unknown)	11.2 / 11.8 / 13.0	Not available	(short base: XC = 128.8 ns)
				XP = X ns	Int ref - 1PPSin (XO) = 27.0 ns / 27.6 ns / 28.8 ns		Short base: XC+XD = 128.8 ns Zero base: XC+XD = 285.9 ns (incl. 0.7 ns splitter and 0.2 ns adapter)

Observations

Short baseline: doy 290-296 (17-23 Oct 2001)
Zero baseline: doy 296-302 (23-29 Oct 2001)

Measurement results

Preliminary: 28/01/2002 (Z. Jiang)

Short baseline: from Doy 294-295
Delta (-XP-XO+XR1+XC+XD+XS1) (IEN - BIPC) = -156.4 ns
Delta (-XP-XO+XR2+XC+XD+XS2) (IEN - BIPC) = -163.0 ns

Zero baseline: from Doy 297-298
Delta (-XP-XO+XR1+XC+XD) (IEN - BIPC) = 0.0 ns
Delta (-XP-XO+XR2+XC+XD) (IEN - BIPC) = -4.1 ns

Calibration results

18/07/2002 (G. Petit)

Short baseline
BIPC: -XP-XO+XR1+XC+XD+XS1 = 565.9 - X ns (using XO from 22 Oct measurements)
BIPC: -XP-XO+XR2+XC+XD+XS2 = 582.2 - X ns (using XO from 22 Oct measurements)
IEN: -XP-XO+XC+XD = 101.8 - X ns (using XO from 22 Oct measurements)
Therefore
IEN: XR1+XS1 = 307.7 ns
IEN: XR2+XS2 = 317.4 ns

Zero baseline
BIPC: -XP-XO+XR1+XC+XD = 540.5 - X ns (using XO from 26 Oct measurements)
BIPC: -XP-XO+XR2+XC+XD = 554.8 - X ns (using XO from 26 Oct measurements)
IEN: -XP-XO+XC+XD = 258.3 - X ns (using XO from 26 Oct measurements)
Therefore
IEN: XR1 = 282.2 ns
IEN: XR2 = 292.4 ns
Therefore
IEN: XS1 = 25.5 ns
IEN: XS2 = 25.0 ns