Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Federal Department of Justice and Police FDJP

Federal Office of Metrology METAS

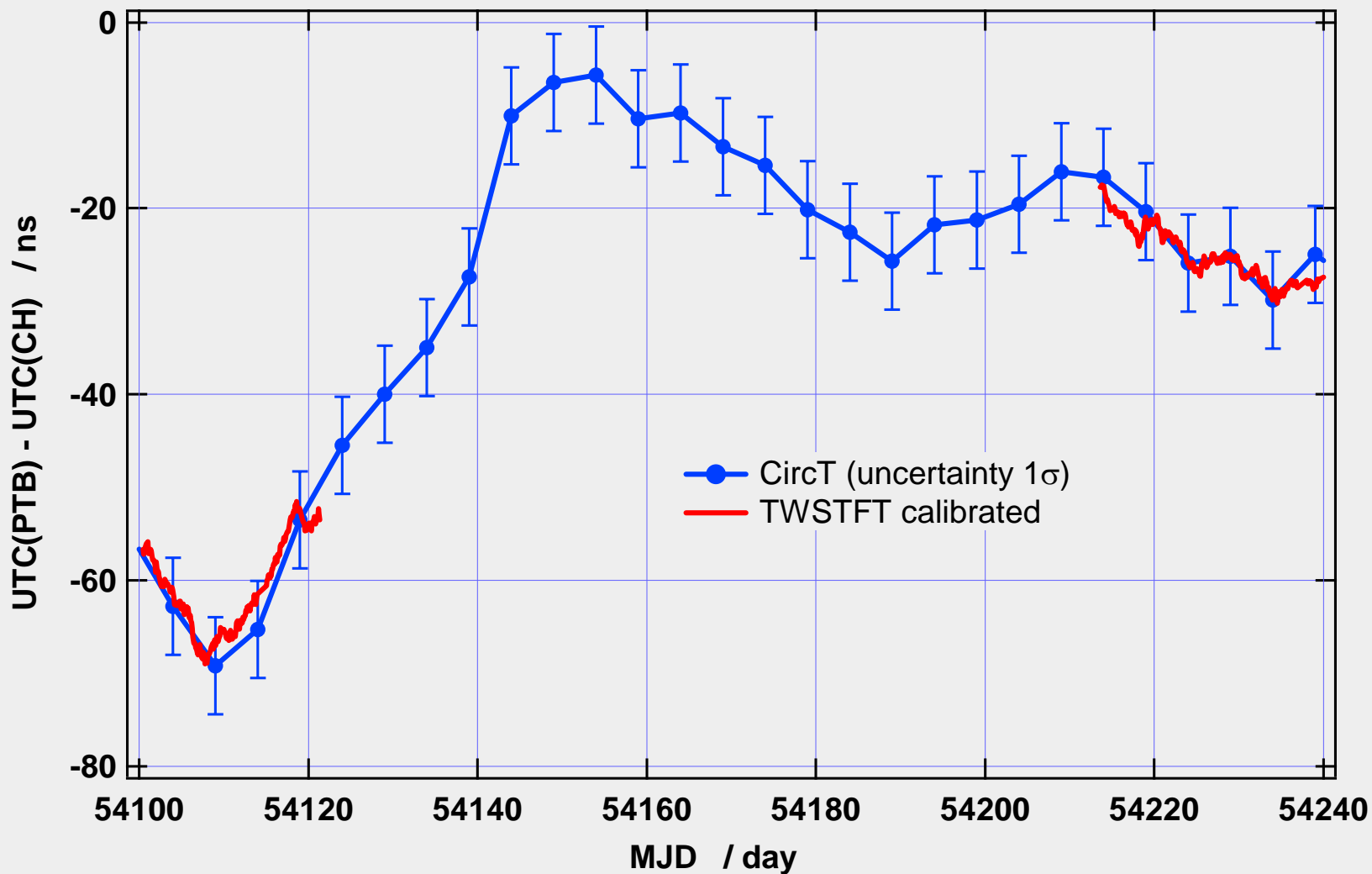# TWSTFT at METAS
Ch. Schlunegger

TWSTFT Operation Interrupted

◆ Station failure on 21 January 10:00 UTC

◆ Faulty transceiver

◆ Sent transceiver to Sematron

◆ Station in operation again since 23 April 06:00 UTC

TWSTFT Reentrant Measurement

Applying Calibration Results

◆ TW link UTC(PTB)-UTC(CH) calibrated on June 2006

◆ Calibration constants published in ITU-files since
1 December 2006

◆ METAS TWSTFT
=> Official connection to TAI since July 2007

CircT: Uncertainty of   UTC - UTC(CH)

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CIRCULAR T 235                                                    ISSN 1143-1393
2007 AUGUST 14, 08h UTC
                      BUREAU INTERNATIONAL DES POIDS ET MESURES
                 ORGANISATION INTERGOUVERNEMENTALE DE LA CONVENTION DU METRE
    PAVILLON DE BRETEUIL F-92312 SEVRES CEDEX  TEL. +33 1 45 07 70 70  FAX. +33 1 45 34 20 21  tai@bipm.org

1 - Coordinated Universal Time UTC and its local realizations UTC(k). Computed values of [UTC-UTC(k)]
    and uncertainties valid for the period of this Circular. From 2006 January 1, 0h UTC, TAI-UTC = 33 s.

Date 2007    0h UTC       JUN 28   JUL  3   JUL  8   JUL 13   JUL 18   JUL 23   JUL 28   Uncertainty/ns  Notes
     MJD                   54279    54284    54289    54294    54299    54304    54309    uA    uB    u
Laboratory k                                         [UTC-UTC(k)]/ns

AOS  (Borowiec)             0.4     -0.3      5.7     11.7      1.1      3.5      5.1    1.5   5.1   5.3
APL  (Laurel)               2.1     -9.9    -13.0     -1.6     -3.0     -7.1      3.0    1.5   5.1   5.3
AUS  (Sydney)             149.2    145.9    151.9    149.3    144.8    134.8    141.1    1.5   5.0   5.3
BEV  (Wien)               -38.7    -35.1    -25.3    -28.9    -27.5    -35.2    -33.3    2.0   5.0   5.4
BIM  (Sofiya)           -5529.9  -5537.3  -5538.8  -5526.7  -5534.5  -5536.8  -5549.9    5.0  20.0  20.6
BIRM (Beijing)          -3258.2  -3320.3  -3345.2  -3380.3  -3405.3  -3438.6  -3464.6    3.5  20.0  20.3
BY   (Minsk)              150.7    173.0    190.3    206.2    205.8    221.3    244.4    7.0  20.0  21.2
CAO  (Cagliari)          -950.8   -978.6   -978.6   -965.6   -979.9  -1002.2  -1013.2    1.5   7.0   7.2
CH   (Bern)               -22.4    -17.8    -15.5    -12.7    -12.2    -13.2    -11.4    0.5   1.3   1.4
CNM  (Queretaro)            4.0     10.7     10.5     16.5     18.1     12.7     20.0    5.0   5.1   7.1
```
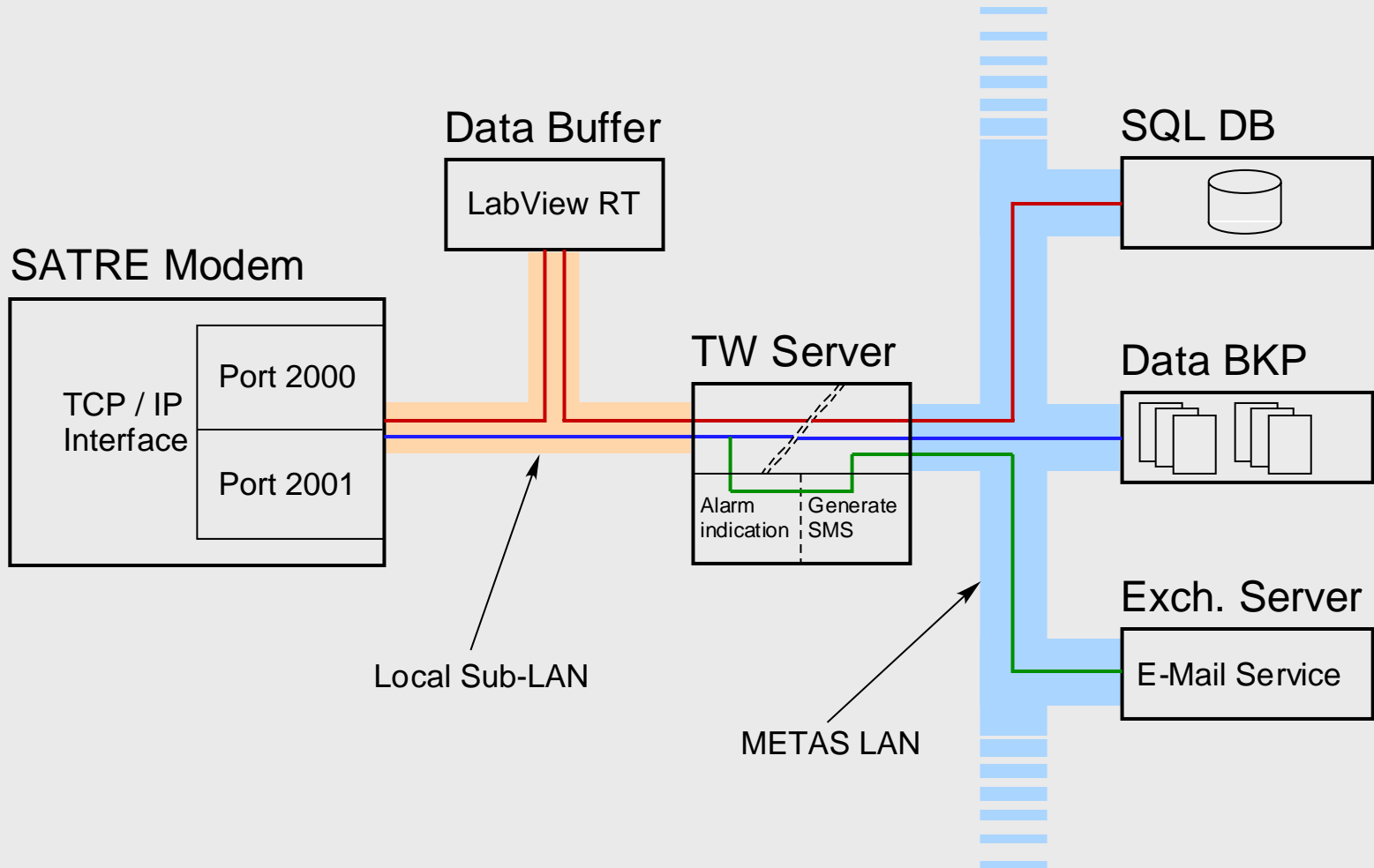
	Uncertainty/ns		
	uA	uB	u
CH (Bern)	0.5	1.3	1.4

Automatic Alarm System Implemented

Data Buffer

LabView RT

SATRE Modem

TCP / IP Interface

Port 2000

Port 2001

TW Server

Alarm indication | Generate SMS

Local Sub-LAN

METAS LAN

SQL DB

Data BKP

Exch. Server

E-Mail Service

Software for Alarm Indication

Enabled Alarms

Tx

2007/09/05;12:43:13;281;00000;INT;H_0;yyyn;yyyuuuym;0.0;53

Rx1

2007/09/05;12:43:13;281;00000;INT;H_0;L;yyncy;T;3; 6; 79;26974

Rx2

2007/09/05;12:43:13;281;00000;INT;B_0;L;yyncy;T;3; 1;281;26988

Tx Module   Rx1 Module   Rx2 Module

Description	Status	Mails	Alarm
Tx Modul Sum Error			
System f ref Error			
System PPS ref Error			
System Time ref Error			
Ground Station communication Error			
Scheduler Error			
Rx1 Sum Error			
Rx2 Sum Error			

Summary

- Interruption of TW operation for 3 months
- TW has become official link to TAI
- Automatic alarm system implemented

Outlook

- Some hardware improvements
- Second calibration with portable earth station