

## **On-Line Process Data Reconciliation - DATREC**

**Application:** The data reconciliation software technology DATREC, is used to improve the accuracy of measurements and/or generate missing values in case of insufficient or faulty field instruments.

This software is designed for a fully automatic operation well adapted to data reconciliation in a real-time control environment of process or utility units. It improves the availability of process control strategies by on-line detection of instrumentation errors and provides consistent data for applications such as: process optimization, scheduling, equipment diagnosis, plant wide mass balance reconciliation, unit performance monitoring and plant maintenance.

**Strategy:** Through statistical techniques, DATREC reconciles raw measurement values using redundancy relations linking these measurements and taking into account instruments accuracy.

DATREC runs in an autonomous manner and adapts to possible changes in the process units operations. This capability translates into the following features of DATREC :

- automatic processing of gross errors on measurements
- generation of an instrumentation guide for instrument maintenance
- automatic evaluation of the standard deviation of each instrument
- dynamic accounting of non monitored or out of scale instruments
- automatic reconfiguration of the system to match modification of process unit operations.

The DATREC software has two modes of operation :

- an automatic on-line mode to provide data to other computer systems and
- an off-line mode to build reconciliation applications, as well as for instrumentation studies.

**Economics :** DATREC is used to improve process monitoring and to enhance the performance of downstream optimization applications. It simplifies the instrumentation maintenance, contributes to sensor's accuracy, provides reliable information to real time optimization and optimizes sensors implementation through instrumentation studies.

**Commercial installations by TECHNIP:** DATREC on-line has been installed at various sites in Europe and in the Middle East, including ELF ANTAR FRANCE, TOTALFINA (Belgium), API (Italy), ELF-MIDER (Germany), CRR and MOBIL (France), ADNOC TAKREER (UAE).

**Licensor:** TECHNIP, ASE Department, Paris and Rome.

A typical DATREC display:

WDatrec 4.0B - [- 01 - Flash drum with steam preheater]

File Edit Reconcile Window ?

Measurements

Sort Column

Meas	Tag	T	Raw Val	Rec Val	Raw Std	Rec Std	Gain	Cor	Nor
F0001	F1	R	100.00	102.25	2.00	.97	51.41	1.12	
F0002	F2	R	30.00	30.19	.50	.45	9.26	.37	
F0003	F3	R	73.00	72.06	1.00	.86	14.14	-.94	
F0004	F17	R	3.00	2.99	.05	.05	.01	-.21	
T0005	T10	E	90.00	16.18	1.00	.02	.	-68.31	
T0006	T11	E	115.00	21.30	1.00	.00	.	-85.35	
T0007	T12	R	70.00	71.46	1.00	.71	29.32	1.46	
T0008	T13	R	72.00	71.46	1.00	.71	29.32	-.54	
T0009	T18	R	150.00	149.57	1.00	.85	15.17	-.43	
X0010	X1A	R	35.00	34.94	1.00	.32	68.31	-.06	
X0011	X1B	R	65.00	65.06	1.00	.32	68.18	.06	
X0012	X2A	R	90.00	91.14	1.00	.01	99.29	1.14	
X0013	X2B	R	8.00	8.86	1.00	.00	100.00	.86	
X0014	X3A	R	10.00	11.39	1.00	.00	99.68	1.39	
X0015	X3B	R	88.00	88.61	1.00	.00	100.00	.61	
P0016	P21	R	4.50	4.64	.20	.11	46.99	.72	
H0017	DT_TSAT	C	1.60	.00	1.92	1.20	.	.	
H0018	H_LIQ_FL	C	34.61	34.33	.52	.37	.	.	

Modify... Used by ... Function... Correlations...

DATREC functionality:

