



## PARAGA1 AND PARAGA2

### FLOW COMPUTATION METHODOLOGIES

SMS (Supervisory Measurement Systems) and/or Flow Measurement systems for LACT, loading/unloading Terminals, Metering, Storage, Custody Transfer etc., traditionally have required proprietary flow computer(s) (e.g. Emerson (Daniels, Fisher-Rock, Bristol), Omni, ABB Totalflow, Thermo, Dynamic Fluid etc.) which sometimes also work in conjunction with PLCs(Programmable Logic Controller)/PACs(Programmable Automation Controller). Some 3<sup>rd</sup> party proprietary hardware modules (e.g. Prosoft MVI56 – AFC) are also used with certain PLCs. Non Microsoft proprietary software (running in MS Windows) like Aquire, Wonderware etc. is also used.

Now Parijat has an inexpensive, innovative software based solution, for both Gases and Liquids that eliminates the need for proprietary 3<sup>RD</sup> party H/W, without compromising on the performance and functionality of the traditional solution. In fact, the Parijat solution provides more features. (*Refer Table below*).

Initially, 2 possible solutions are being made available – one is PC based (PARAGA1) and the other is PLC/PAC based (PARAGA2). The 2 may also be combined in certain scenarios to get the most optimum solution(s). Contact us for a Field Proof of Concept at your facility for no charge.

	FLOW COMPUTER	PLC	PARIJAT/MS .NET PARAGA 1	PARIJAT PLC/PAC PARAGA 2
Type	Hardware	Hardware	Software	Software
Procurement	New	New	Generally available on site anyway	Generally available on site anyway
Redundancy Implementation	Difficult	Difficult	Easy	Easy
Interface to HMI/SCADA Systems	Typically MODBUS	Typically MODBUS	Any Protocol	MODBUS and others
Meters Qty	Typically 4	Typically 4	Unlimited	Unlimited
Performance per Meter	Milliseconds	Milliseconds	Microseconds	Microseconds
Copies of Data	Multiple	Multiple	Single	Single
Hardware Multiplicity	Multiple	Multiple	Single	Single
Field Installation Cost	High	High	Low	Low
Future Modifications	Complex	Complex	Simple	Simple
Measurement Technician Interface	Windows App	Windows App	Windows App	Windows App



Custody Transfer (Certified)	YES	YES	Coming Soon	Coming Soon
Remote Printing	No	No	Yes	Yes

## FEATURES

### COMMON:

1. API, AGA3 tables with Chromatograph/Densitometer is supported.
2. Any number of meter runs/streams is supported.
3. Full list of events, alarms, audit trail and archives are provided.
4. Contact for special requirements like Multi-Phase, Ultrasonic, Special fluids measurement etc.
5. Built-in support for interface to smart meters like Coriolis, Ultrasonic, etc.
6. Integration of Multi-site installations is available.
7. Web Server for Integrated/embedded web applications available. Mobile Devices (Smartphones, iPad, Touchpads) supported. Some HW (iPad) available as Class 1 Div 2 also.
8. Pass-through mode available for MODBUS and MB/TCP.
9. Can also work with various traditional flow computers.
10. Various smart transmitters/field devices supported (e.g. HART) without special interface H/W.
11. Native plug-in to Parijat/MS HMI and SCADA system.
12. Custom Solution Development and Technology Transfer services also available.

### PARAGA1:

1. Embedded PC OS – Windows 7/8, Win XP, Embedded 7/XP, Win CE.Net.
2. Desktop PC OS – Windows 7/8 (64/32 bit), XP (64/32 bit), Server 2008 R2-Win 2k
3. Plug-in to existing HMI/SCADA or Business/Enterprise systems or run as a standalone application.
4. Various pre-built and custom reports available.
5. Simple PLC type logic functions available with PARAGA1, eliminating the need to have a PLC.
6. Accounting systems like PGAS, Coastal flow (CFX), etc. are supported.

- 7. Uses MS SQL Server as Database, eliminating need for multiple copies of data.
- 8. Can work with any brand of PLCs and any vendor's I/O modules talking open protocols.

**PARAGA2:**

- 1. PLC/PACs supported – AB/Rockwell CLogix, others coming soon. Contact for support on specific PLCs.

## POSSIBLE ARCHITECTURE COMPARISON FOR FLOW COMPUTATION



