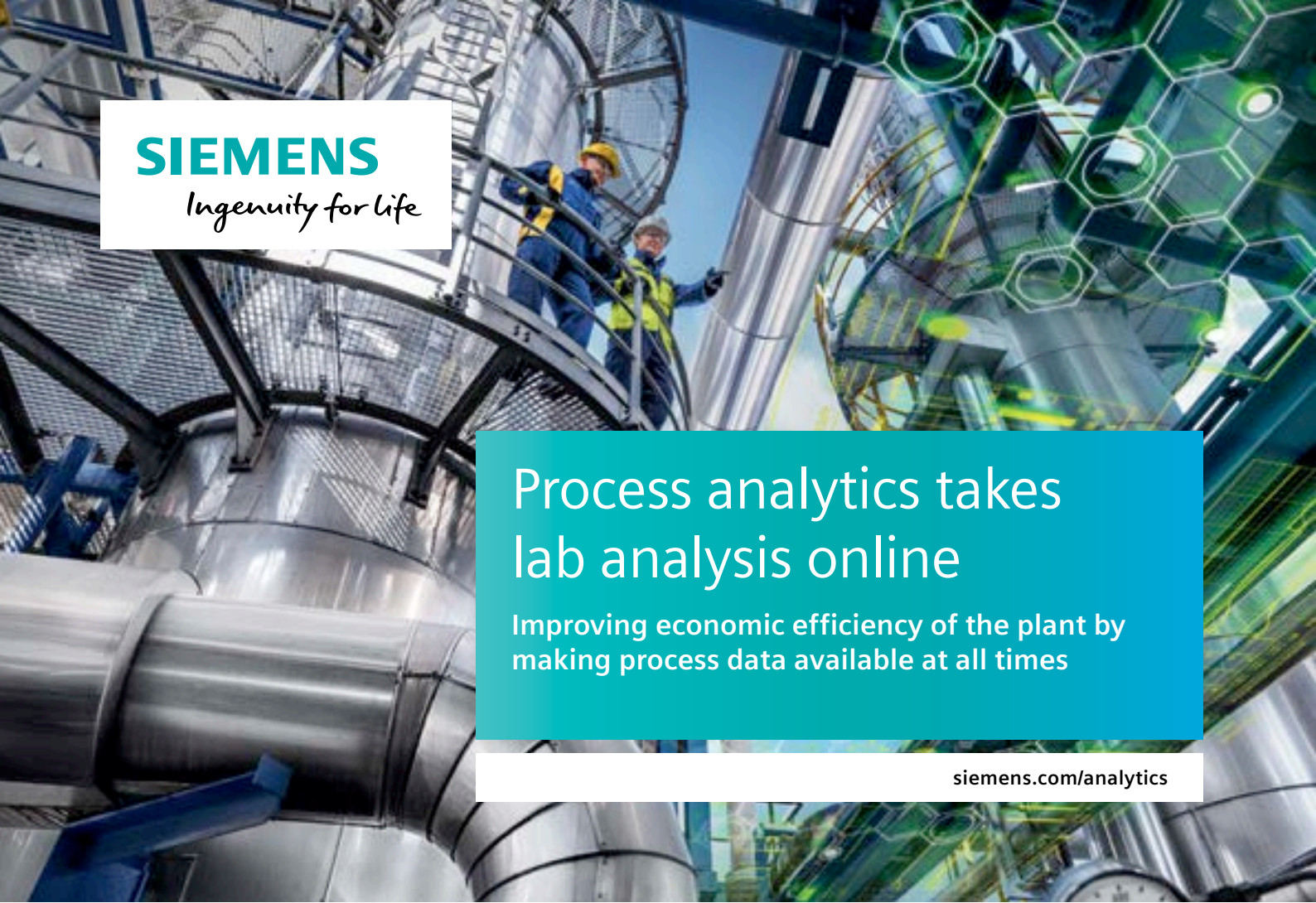




**SIEMENS**

*Ingenuity for life*



## Process analytics takes lab analysis online

Improving economic efficiency of the plant by making process data available at all times

[siemens.com/analytics](https://www.siemens.com/analytics)

### Process analytical technology: Proven in use

Online process analytics can be worthwhile with as little as one analysis per day. Compared to lab analysis, its particular appeal lies in having measured values available quickly, with no interruptions or lengthy transit times. Process analyzers are perfectly adapted to the special requirements of the chemical industry and make a substantial contribution toward both optimization and efficiency improvement in chemical plants. Siemens Analytical Products and Solutions offers end-to-end system solutions for process analytics.

### Offline lab analysis

Offline lab analysis usually requires samples to be taken manually, with significant delays of up to several hours before they are analyzed in the lab. There is also the risk of alteration prior to analysis. All this makes it harder to control the process.

### When is process analytics worthwhile?

As part of process management, process analytics helps ensure processes are as economically efficient as possible. The amortization period is often under one year.

### Why perform measurements online?

- Process data is available at all times (24/7, 365 days a year, fully automatic, typical availability >95 %)
- Best cost-benefit ratio in terms of staff costs and time
- Reliable measurement results
- Proven conformity with regulations on workplace safety
- Reliable plant safety



MAXUM Edition II process gas chromatograph

### Use case

#### Online liquid analysis with process GC

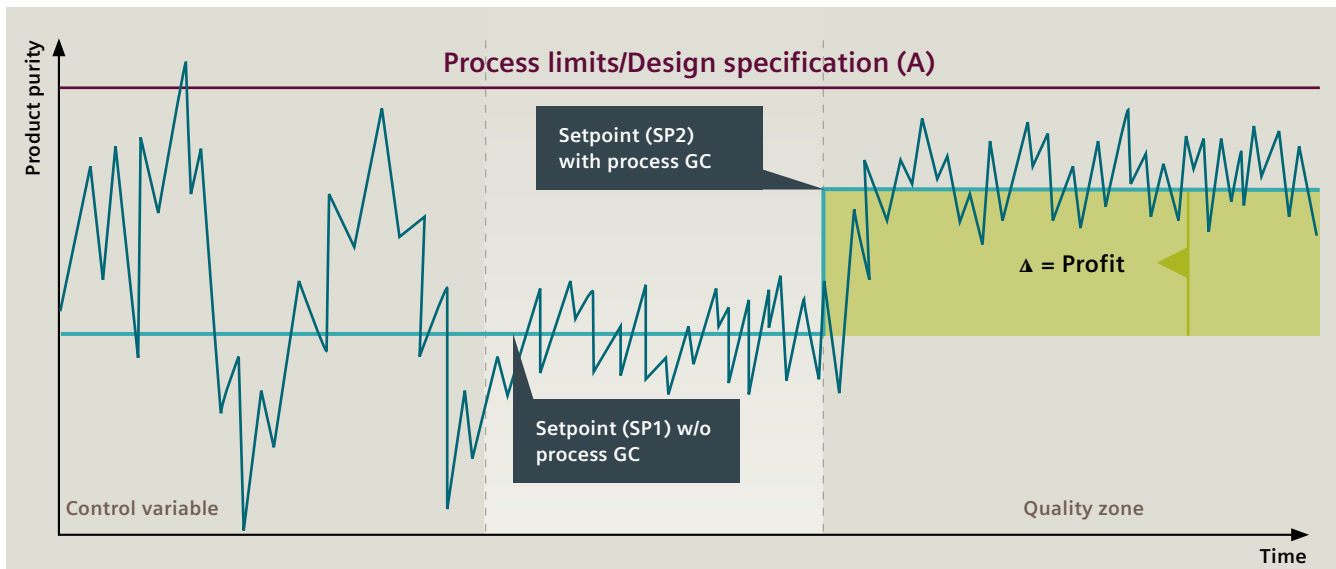
Distillation towers are often monitored using process GC systems. The more top product that flows back into the column, the purer the end product will be. The illustration shows a typical optimizing sequence. The setpoints (SP1, SP2) must be determined to ensure that the maximum impurity level (A) as per the design specification is not achieved. Optimized process monitoring using process GC enables the purification process and the setpoint (SP2) established for it to run at the limits of the product sales specification without risk. The result is economical plant operation, high product quality, and increased throughput. Gas chromatographs make a valuable contribution in this regard.

#### MAXUM Ed. II monitors process conditions online

The MAXUM process GC is known for its top-level technology and superior qualities. Its great flexibility enables the best possible analytical solution for any measurement task, while keeping costs as low as possible. Powerful analytical components are available to make this possible, as well as for demanding tasks like liquid process flows.

The hardware can therefore be perfectly adapted to the specified analysis requirement for many versions of injectors, ovens, detectors, and separating columns:

- Single- and dual-oven design to minimize the required number of devices
- Ovens with a temperature program to optimize separating performance and analysis time for complex and heavy mixtures
- Airless oven technology to reduce power costs
- Modular injection methods – also for liquids to ensure the best possible evaporation of heavy liquid samples and the lowest possible detection limit
- Valveless column switching to reduce maintenance costs
- Sensitive detectors (FID, FPD, PDHID) to demonstrate the smallest amounts of trace components



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