

SIDAT

DIGITAL

COMPANY PROFILE

DIGITAL TWIN TECHNOLOGY

INTEGRATION OF PHYSICAL
AND DIGITAL TECHNOLOGIES

COMPLETELY DIGITIZED PRODUCTION

SIDAT

DIGITAL —————

The business establishment **SIDAT DIGITAL s r.o. (Ltd.)** was founded in March of 2018 with parity setup of the Czech company **SIDAT** seated in Prague (Czech Republic) and the Slovak company **SOVA Digital** seated in Bratislava (Slovak Republic).

Both founders are market noted in their specific branches. **SIDAT** with more than 30 years history, today as a meaningful Central Europe company in the field of industrial automation and production informatics, **SOVA** with more than 27 years (related to the date of **SIDAT DIGITAL** foundation) serving the market by the innovative solutions in the field of digitization and optimization the production processes.

The main **SIDAT DIGITAL** leverage is, based on the mutual co-founder cooperation in the newest projects in the Czech and Slovak production enterprises, to implement perspective beneficial solutions coming out from the integration of both physical and digital technologies.

The company **SIDAT DIGITAL** is seated in Bratislava (Slovakia) and in offices in Bratislava and Prague completes the **SIDAT** and **SOVA** portfolio mainly in the following branches:

DIGITAL TWIN TECHNOLOGY

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AND DIGITAL TECHNOLOGIES

COMPLETELY DIGITIZED
PRODUCTION

DIGITAL TWIN TECHNOLOGY

The mainstay of the activities in this field is the development, verification and follow-up implementation of the as much as possible trustworthy digital model of the physical production system.

Such a model we understand as a wide range digital copy of the production system. When then, by appropriate procedures utilized, can effectively support all the steps in the design or reconstruction phase, via simulation procedures check in advance the standard and non-standard running cases, as well as e. g. generate data for predictive maintenance.

Typical tasks where the benefits of the digital twin usage can be at present already found e. g. are:

- ▶ Line and continual production pre-simulation
- ▶ Simulation of the production systems composed of machine tools or island work places
- ▶ Verification of the throughput rate in the logistics applications
- ▶ Prediction and on-time elimination of non-standard and/or down time situation
- ▶ Production system workload optimization
- ▶ Quality control

INTEGRATION OF PHYSICAL AND DIGITAL TECHNOLOGIES

The company SIDAT DIGITAL business strategy in this field is based on the following multilevel hierarchical application structure:

LEVEL 1 (AUT/OP)

Local control and automation of production and technological processes (AUT), incl. installation of electrical and field elements and systems (e. g. drives, sensors e. t. c.), and visualization by means of operator panels (OP)

LEVEL 2 (HMI/SCADA)

Production and technological processes visualisation where their control from the technological (shop-floor) level is currently available

LEVEL 3 (MIS/MES)

Production/manufacturing information system making use of wide range of acquired data from various sources (MIS). Off-line simulation and process optimisation in the semi-digitized production environment (quasi-MES)

LEVEL 4 (CDP/DT)

Completely digitized production environment (CDP). Existence of its trustworthy digital model (digital twin/DT). Full data integration within the levels 1, 2 and 3 and of both physical and digital technologies. The use of the on-line optimization algorithms and control procedures (MES).

(Such a scope was recently also inexactly presented as Production on Industry 4.0 principles).

COMPLETELY DIGITIZED PRODUCTION

Besides of the digital model existence, its full data integration and continuous communication with the physical production/manufacturing/logistic system has to be secured. In context of such a challenge many necessary adaptations, upgrades and offsets have to be performed at the user.

This primarily refers e. g. the completion of necessary status, process and operation data, building-up the reliable communication network architecture featuring the general operation security, furthermore the structure of the superior and local databases, and implementation and putting into operation means for optimized utilisation of big sets of status, process and operation data, mentioned above.

Here, **SIDAT DIGITAL** joins together the own services bearing on the well-tried control, visualisation and instrumentation platforms of market leading companies as e. g. **Siemens, Emerson Process Management, ProLeit, AspenTech, GE, MS SQL** and **SIDAT**.

Moreover, the customers can also continuously profit by a practical “cookery-book” focused on the step-by-step fulfilling the presumptions for doing the digitized production in their specific environment executable.

CONSULTANCY AND INDUSTRIAL ADVISING

The design and realisation of projects where the integration of physical and digital technologies and implementation of would be integrated physical and digital technologies corresponding to the level 4 takes place, might represent, both from the expert as well as personnel points of view, one of the most demanding objects.

That's why we offer the customer **professional support**, namely from the very beginning of the project. Such a support can comprise guided **consultancy** related to all investment intentions and relevant to the elaboration of feasibility studies, assistance in the phase of selection procedures for HW/SW and service suppliers, and personnel training and execution plans.

Based on the up-to-now experience from done projects we offer also an effective assistance/support in the phase of project commissioning. Besides of implementation time shortening and growth of the resulting operation reliability leads such a SIDAT DIGITAL involvement to a significant reduction of costs needed for the project introduction.

MORE ABOUT THE COMPANY

Both co-founders of the SIDAT DIGITAL company are since years the certified application partner of prestigious world-leading producers.

According to the company experience, all themes concerning the production over, reach an understanding of the professionals investing response and future managements modernization action. Having been involved in the fail-safe projects, the company manage by renowned specialists in solving critical emergency situations during the running of digitized production.

Through courses and workshops, the company can also contribute to appropriate personnel education to be qualified for the needs of the client. SIDAT DIGITAL is prepared to assist and support the customer during the whole modernization process, **in particular in the commissioning and after-sale phase**. That's why our customers feel a strong and effective business relationship.

REFERENCES

In the course of the past years, we were able, introduce projects mainly in the automotive, machine-building and food & beverage industries. We can proudly mention e. g. the following customers:

ATTL
EKOM
Garret Advanced
Motion
HDF
IMC Slovakia
Sandvik Precision
Tubes

SAS Automotive
SECOP
Selmec
Siempelkamp
SK-CONT
Terom
Viena International
ZF Slovakia

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