mySCADA

Logistics

INTRODUCTION

One of the greatest online clothing stores in middle Europe called Zoot started to think of the automation process in the second half of 2017. After a thorough analysis, a few conclusions were made. The bottleneck of company development (and related turnover) is the high spending in the storage area. The costs included human resources as well as the time duration. Those costs turned out to be the most important motivator to implement an automatized system into the store.

ZOOT.

About the company

Zoot was found in 2007 in Prague and these days it has become one of the most successful clothing e-shops in central Europe. Zoot is strongly customer-oriented and based on international statistics it is considered as one of the fastest growing European companies (2018 research).

PROJECT

For the automated system, Zoot chose an established supplier of logistics equipment – Blumenbecker, which delivers the conveyor belt to the storage space. This installation has to be provided with a control system that is able to fulfil Zoot´s requirements. Blumenbecker used a server solution from mySCADA called myPRO. The project size is estimated at 1,500 tags which will be controlling 3 conveyor belts.

Pic. 1 – The interier of the warehouse, the conveyor belts

Project assignment

The main assignment is the online monitoring of the logistics processes inside the storage space. The next requirement is to detect the downtimes and failures and taking measures to decrease unnecessary expenses and thereby to streamline the distribution of the products.

> „The most important parameter to follow is logging of the failures on the conveyor belt. Based on our analysis, we're looking at both time and cost savings. I truly believe that mySCADA system helps us to make our logistics in the storage space more effective "
>
> says Petr Bina, IT consultant and administrator at Zoot.

Main requirements for the control system:

Control the conveyor belts in real time
workload of each zone

The overview of the failures on the conveyors
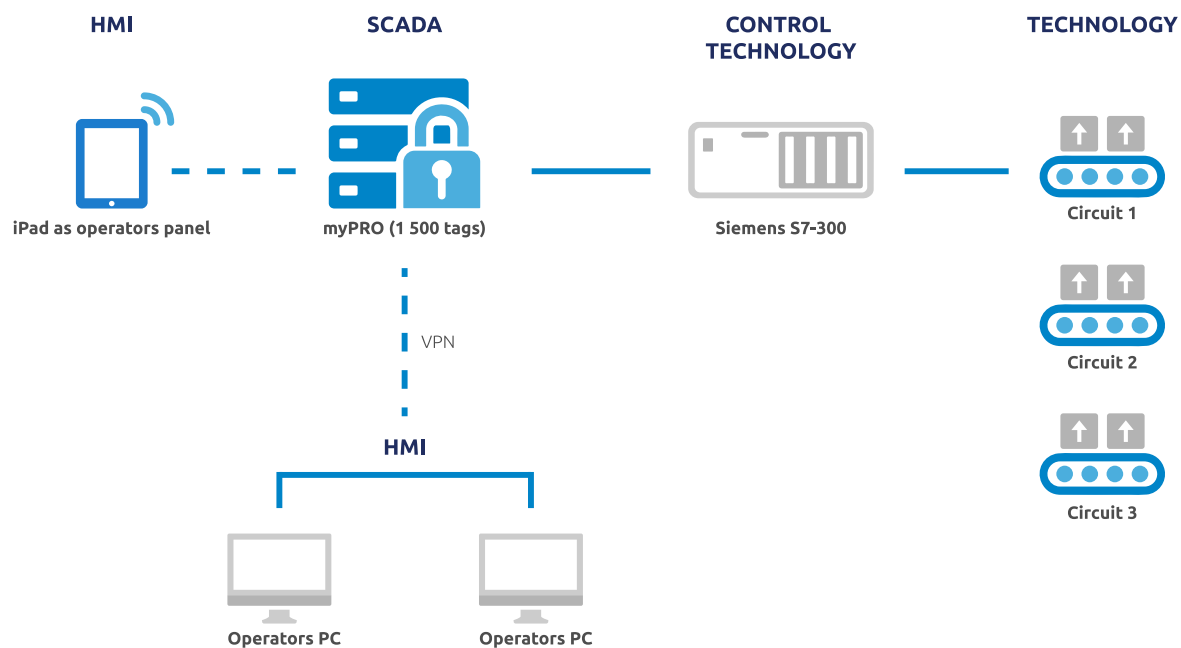frequency of failures + impact on logistics

The ability to track processes via web browser
access from everywhere

The access to the system for more users
clearly defined responsibilities for changes

Connection scheme:

Pic. 2 – Connection scheme

PROJECT - VISUALIZATION

On 3 conveyor belts, delivered by Blumenbecker, there are crates with the specific orders from the customers. The whole area is divided into a few sections. Each section has its own number of crates which are optimal for the specific sector. If the crates are divided evenly, everything is all right (see Pic. 3, zone (zóna) 4 – green). In the case of greater load or overload of the sector (see Pic. 3, zone (zóna) 6 - yellow or zone 3 - red), the shift manager can solve the situation immediately – e.g. personal strengthening in the part of the storage.
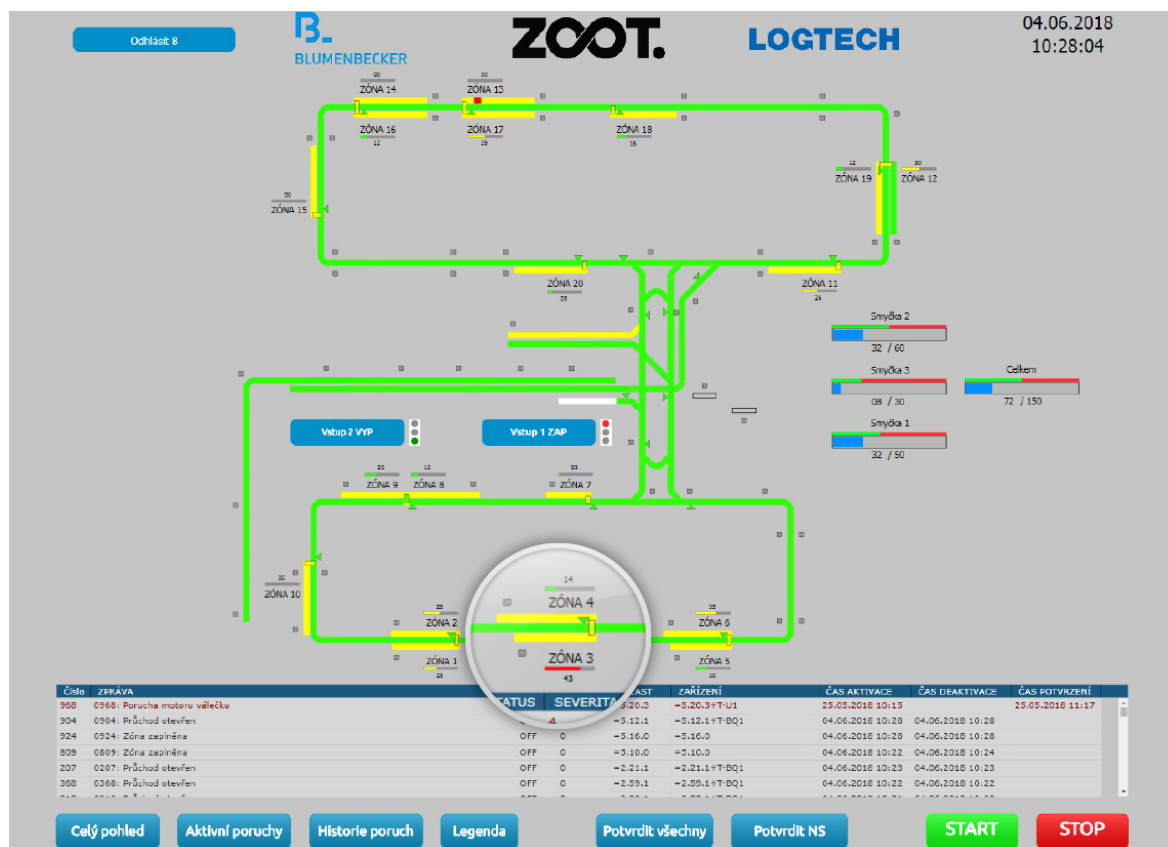
Pic. 3 – The general overview

The next screen (Pic. 4) gives an overview of all changes that have been made for the last period. It is set based on the need of each industrial sector. The time interval, in which the situation lasted, is seen in here as well.

Pic. 4 – Logging changes – quick overview

All changes happening in the distribution chain are chronologically logged – Pic. 5. This data helps to analyse the "bottle necks" in the distribution process. Observing the trends lead to solutions which make the distribution more effective. All historical data is available (by choosing a time period). The data can be exported to PDF or MS Excel easily.

Odhlásit 8   BLUMENBECKER   ZOOT.   LOGTECH   04.06.2018 10:28:41

LIMIT: 10000   AKT   DEA   POT   SUP   UNS   SEVERITA   TEXT   Export

Číslo	ZPRÁVA	STATUS	SEVERITA	OBLAST	ZAŘÍZENÍ	ČAS AKTIVACE	ČAS DEAKTIVACE	ČAS POTVRZENÍ
904	0904: Průchod otevřen	DEA	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
904	0904: Průchod otevřen	AKT	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...		
924	0924: Zóna zaplněna	DEA	0	=5.1...	=5.16.0	04.06.2018 10:...	04.06.2018 10:...	
924	0924: Zóna zaplněna	AKT	0	=5.1...	=5.16.0	04.06.2018 10:...		
904	0904: Průchod otevřen	DEA	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
924	0924: Zóna zaplněna	DEA	0	=5.1...	=5.16.0	04.06.2018 10:...	04.06.2018 10:...	
904	0904: Průchod otevřen	AKT	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...		
809	0809: Zóna zaplněna	DEA	0	=5.1...	=5.10.0	04.06.2018 10:...	04.06.2018 10:...	
924	0924: Zóna zaplněna	AKT	0	=5.1...	=5.16.0	04.06.2018 10:...		
904	0904: Průchod otevřen	DEA	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
904	0904: Průchod otevřen	AKT	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...		
207	0207: Průchod otevřen	DEA	0	=2.2...	=2.21.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
207	0207: Průchod otevřen	AKT	0	=2.2...	=2.21.1+T-BQ1	04.06.2018 10:...		
368	0368: Průchod otevřen	DEA	0	=2.5...	=2.59.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
809	0809: Zóna zaplněna	AKT	0	=5.1...	=5.10.0	04.06.2018 10:...		
904	0904: Průchod otevřen	DEA	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	04.06.2018 10:...
368	0368: Průchod otevřen	AKT	0	=2.5...	=2.59.1+T-BQ1	04.06.2018 10:...		
318	0318: Průchod otevřen	DEA	0	=2.3...	=2.38.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
318	0318: Průchod otevřen	AKT	0	=2.3...	=2.38.1+T-BQ1	04.06.2018 10:...		
1028	1028: Průchod otevřen	DEA	0	=5.3...	=5.31.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
1028	1028: Průchod otevřen	AKT	0	=5.3...	=5.31.1+T-BQ1	04.06.2018 10:...		
368	0368: Průchod otevřen	DEA	0	=2.5...	=2.59.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	04.06.2018 10:...
162	0162: Porucha senzoru / senzor příliš dlouho obsazen	DEA	4	=2.5.0	=2.5.0+T-BL1	04.06.2018 10:...	04.06.2018 10:...	04.06.2018 10:...
904	0904: Průchod otevřen	POT	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...		04.06.2018 10:...
368	0368: Průchod otevřen	POT	0	=2.5...	=2.59.1+T-BQ1	04.06.2018 10:...		04.06.2018 10:...
162	0162: Porucha senzoru / senzor příliš dlouho obsazen	POT	4	=2.5.0	=2.5.0+T-BL1	04.06.2018 10:...		04.06.2018 10:...
368	0368: Průchod otevřen	AKT	0	=2.5...	=2.59.1+T-BQ1	04.06.2018 10:...		
207	0207: Průchod otevřen	DEA	0	=2.2...	=2.21.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
207	0207: Průchod otevřen	AKT	0	=2.2...	=2.21.1+T-BQ1	04.06.2018 10:...		
368	0368: Průchod otevřen	DEA	0	=2.5...	=2.59.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
1028	1028: Průchod otevřen	DEA	0	=5.3...	=5.31.1+T-BQ1	04.06.2018 10:...	04.06.2018 10:...	
368	0368: Průchod otevřen	AKT	0	=2.5...	=2.59.1+T-BQ1	04.06.2018 10:...		
196	0196: Zóna zaplněna	DEA	0	=2.1...	=2.17.0	04.06.2018 10:...	04.06.2018 10:...	
1028	1028: Průchod otevřen	AKT	0	=5.3...	=5.31.1+T-BQ1	04.06.2018 10:...		
904	0904: Průchod otevřen	AKT	0	=5.1...	=5.12.1+T-BQ1	04.06.2018 10:...		
337	0337: Zóna zaplněna	DEA	0	=2.4...	=2.45.0	04.06.2018 10:...	04.06.2018 10:...	
337	0337: Zóna zaplněna	AKT	0	=2.4...	=2.45.0	04.06.2018 10:...		
310	0310: Zóna zaplněna	DEA	0	=2.3...	=2.34.0	04.06.2018 10:...	04.06.2018 10:...	

59d 17:20:00

Celý pohled   Aktivní poruchy   Historie poruch   Legenda   Potvrdit všechny   Potvrdit NS   START   STOP

Pic. 5 – Data history

Odhlásit 8   BLUMENBECKER   ZOOT.   LOGTECH   04.06.2018 10:28:26

Dopravníky
- ■ Nouzový stop (modrá)
- ■ Připraven (žlutá)
- ■ Provoz (zelená)
- ■ Porucha (červená)
- ■ Vypnuto (světle modrá)
- ■ Údržba (oranžová)
- ■ Blokováno (černá)
- ☐ Zaplněno (bílá)

Skenery
- ■ Nouzový stop (modrá)
- ■ Připraven (žlutá)
- ■ Provoz (zelená)
- ■ Porucha (červená)
- ■ Vypnuto (světle modrá)

Nouzové stopy
- ● Tlačítko stlačeno (žlutá)
- ● Tlačítko uvolněno (červená)

Číslo	ZPRÁVA	STATUS	SEVERITA	OBLAST	ZAŘÍZENÍ	ČAS AKTIVACE	ČAS DEAKTIVACE	ČAS POTVRZENÍ
968	0968: Porucha motoru válečku	AKT	4	=5.20.3	=5.20.3+T-U1	25.05.2018 10:15		25.05.2018 11:17
904	0904: Průchod otevřen	OFF	0	=5.12.1	=5.12.1+T-BQ1	04.06.2018 10:28	04.06.2018 10:28	
924	0924: Zóna zaplněna	OFF	0	=5.16.0	=5.16.0	04.06.2018 10:28	04.06.2018 10:28	
809	0809: Zóna zaplněna	OFF	0	=5.10.0	=5.10.0	04.06.2018 10:22	04.06.2018 10:24	
207	0207: Průchod otevřen	OFF	0	=2.21.1	=2.21.1+T-BQ1	04.06.2018 10:23	04.06.2018 10:23	
368	0368: Průchod otevřen	OFF	0	=2.59.1	=2.59.1+T-BQ1	04.06.2018 10:22	04.06.2018 10:22	

Celý pohled   Aktivní poruchy   Historie poruch   Legenda   Potvrdit všechny   Potvrdit NS   START   STOP

Pic. 6 – Legend

In each project, there is an option to add new screens, users or logged values. The system is fully flexible, independent and easy to maintain. The visualization shows changes in real time which allows quick reaction when situation requires.

ADDED VALUE

mySCADA visualization of logistic processes fulfil the project assignment and all of the supplier's (Zoot's) requirements. The operations department controls the conveyor belts in real time as well as the whole distribution in the storage areas. That ensures **adequate and fast reaction** to different situations. The IT department has access to both important data – the system failures and its frequency. Based on this data, the department is able to **analyse and optimize processes** and subsequently propose solutions which lead to streamlining the logistics.

> *„We are extremely satisfied with the visualization because it facilitates our work. After the first few months of operation, we can say the system is stable with the ability to connect from anywhere which is really helpful, especially for me. Thanks to the user hierarchy feature, we assign rights just to the competent and responsible employees and that surprisingly leads up to the elimination of failures"*
>
> says Petr Bina.

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> *„Targeted reaction on the overloading in the zones saves us millions (CZK) onwage costs"*
>
> continues Petr Bina.

CONCLUSION

Based on reactions of Zoot, the visualization system meets the expectations very well. The company decreased their labor costs, optimized the distribution process and, thanks to these savings, plans expansion as well. The system is now waiting for little tailored customization – graphics etc.

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