mySCADA

Automotive industry

REFERENCE
January 2018

INTRODUCTION

The Vibracoustic company (a manufacturer of car components) showed an interest in modernizing its production hall. The company started to look for a visualization system that would overview the production and help to decrease the costs to be even more competitive to their automotive “rivals”. The most suitable solution was mySCADA, which offers visualization software placed in an operator’s panel.

About the company

Vibracoustic is an exclusive supplier of components preventing the vibrations in automotive industry. The company produces and delivers bearings, handles, insulators, and shock absorbers all around the world for producers of all kind of vehicles. The manufacturing plant near Prague is specialized in producing products for gearboxes and engines.

PROJECT

The need of implementation arose primarily due to two reasons. The company was looking for an on-line system that was able to log the production data to **tables** as well as in **graphic** form.

Picture 1 - The operator panel placed in a production hall

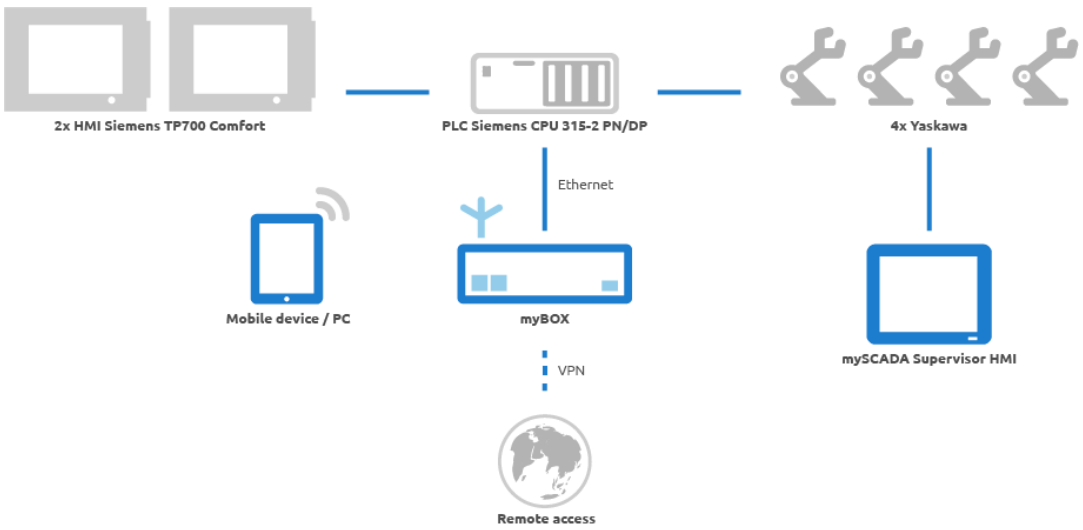
„We chose mySCADA because they were able to customize their software to our requirements. The other advantage for us seems to be a high stability of the system“

says Michal Pavlu (the Plant Process Engineer in Vibracoustic).

Project assignment

1. Predefined data collection.
2. Predefined parameters display (e.g. hourly performance of the production line, a graphical representation of the most important parameters, displaying of the current production statuses or displaying of additional documentation).
3. Program selection and recording of the interventions to the production line (the overview of the changes in production).
4. User hierarchy - the overview of the access rights for users and the ability to see any changes made by each user. (All changes have to be approved by a competent person – in this case by a technologist.)

Connection scheme



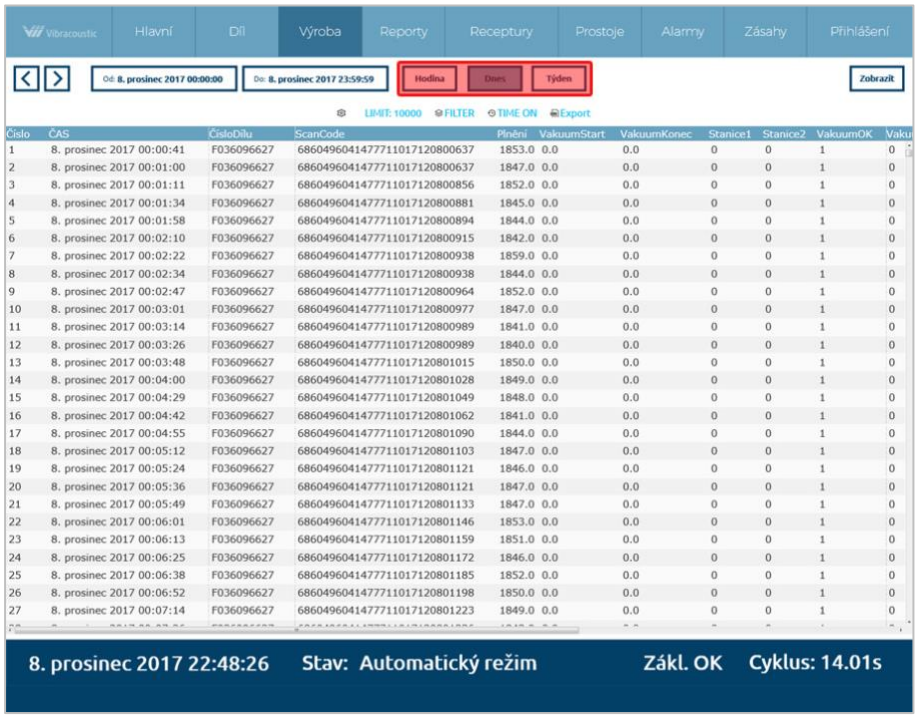
PROJECT – VISUALIZATION

The operators track the performance of the line while checking the documentation for the manufactured part on the next monitor. When a change in production has to be made, the operator uses the panel for the item selection and loading to the line. The technologist controls the processes and is able to efficiently react to the current situation.

The visualization and the line were set and optimized to the extent that, in these days, there is almost no need for system adjustment. The management team is able to see and control the performance of the production line, view how efficient the production line is, and determine if any time delays are happening.

Screens

On this screen you can see the data available for each manufactured component. There is the greatly appreciated ability to choose just the data you need (per hour/day/week) – in red box.



Číslo	ČAS	ČísloDílu	ScanCode	Plnění	VakuumStart	VakuumKonec	Stanice1	Stanice2	VakuumOK	Vaku
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2	8. prosinec 2017 00:01:00	F036096627	68604960414777110171201800637	1847.0	0.0	0.0	0	0	1	0
3	8. prosinec 2017 00:01:11	F036096627	68604960414777110171201800856	1852.0	0.0	0.0	0	0	1	0
4	8. prosinec 2017 00:01:34	F036096627	68604960414777110171201800881	1845.0	0.0	0.0	0	0	1	0
5	8. prosinec 2017 00:01:58	F036096627	68604960414777110171201800894	1844.0	0.0	0.0	0	0	1	0
6	8. prosinec 2017 00:02:10	F036096627	68604960414777110171201800915	1842.0	0.0	0.0	0	0	1	0
7	8. prosinec 2017 00:02:22	F036096627	68604960414777110171201800938	1859.0	0.0	0.0	0	0	1	0
8	8. prosinec 2017 00:02:34	F036096627	68604960414777110171201800938	1844.0	0.0	0.0	0	0	1	0
9	8. prosinec 2017 00:02:47	F036096627	68604960414777110171201800964	1852.0	0.0	0.0	0	0	1	0
10	8. prosinec 2017 00:03:01	F036096627	68604960414777110171201800977	1847.0	0.0	0.0	0	0	1	0
11	8. prosinec 2017 00:03:14	F036096627	68604960414777110171201800989	1841.0	0.0	0.0	0	0	1	0
12	8. prosinec 2017 00:03:26	F036096627	68604960414777110171201800989	1840.0	0.0	0.0	0	0	1	0
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15	8. prosinec 2017 00:04:29	F036096627	68604960414777110171201801049	1848.0	0.0	0.0	0	0	1	0
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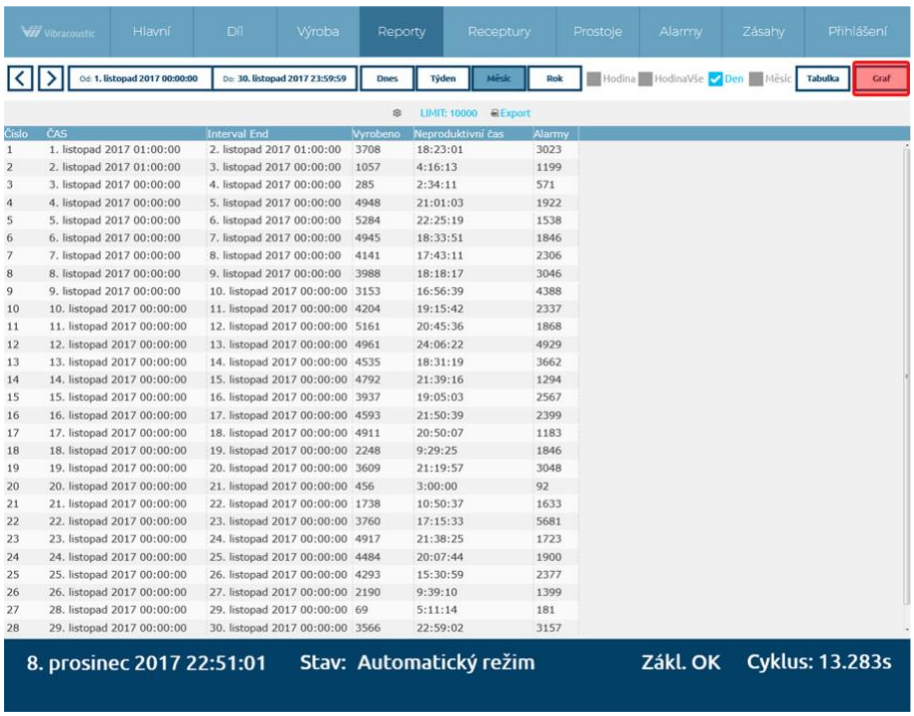
21	8. prosinec 2017 00:05:49	F036096627	68604960414777110171201801133	1847.0	0.0	0.0	0	0	1	0
22	8. prosinec 2017 00:06:01	F036096627	68604960414777110171201801146	1853.0	0.0	0.0	0	0	1	0
23	8. prosinec 2017 00:06:13	F036096627	68604960414777110171201801159	1851.0	0.0	0.0	0	0	1	0
24	8. prosinec 2017 00:06:25	F036096627	68604960414777110171201801172	1846.0	0.0	0.0	0	0	1	0
25	8. prosinec 2017 00:06:38	F036096627	68604960414777110171201801185	1852.0	0.0	0.0	0	0	1	0
26	8. prosinec 2017 00:06:52	F036096627	68604960414777110171201801198	1850.0	0.0	0.0	0	0	1	0
27	8. prosinec 2017 00:07:14	F036096627	68604960414777110171201801223	1849.0	0.0	0.0	0	0	1	0

Picture 2 - The overview of production for each component

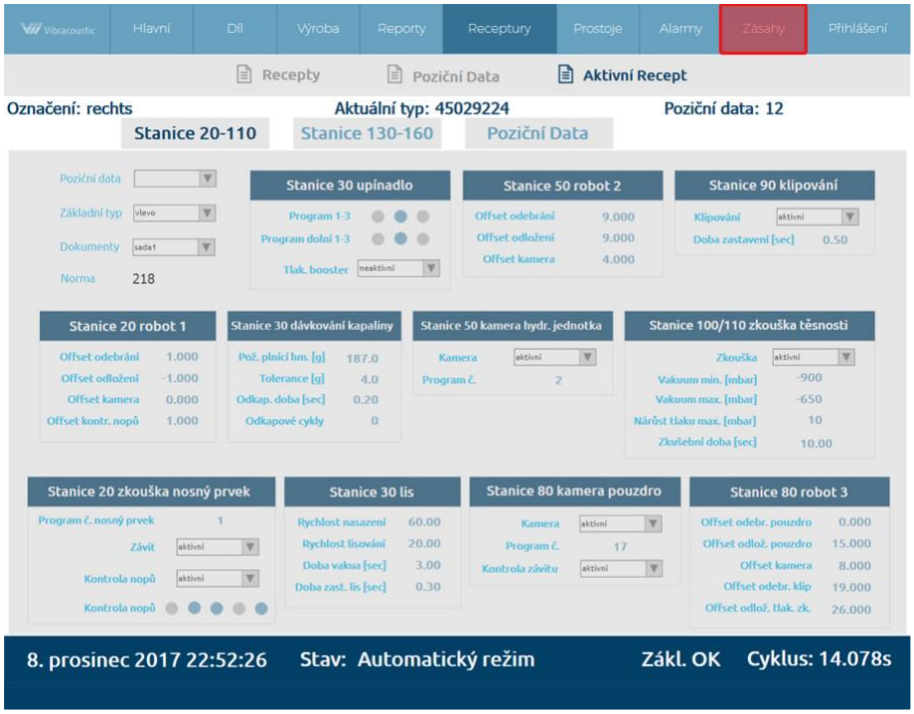
The section Report is an important tool for data evaluation. Each column describes which component is currently being made, how many of them have already been made, what was the time duration – for better control, the data is also available in graphical form.



Číslo	ČAS	Interval End	Vyrobeno	Neproduktivní čas	Alarmy
1	1. listopad 2017 01:00:00	2. listopad 2017 01:00:00	3708	18:23:01	3023
2	2. listopad 2017 01:00:00	3. listopad 2017 00:00:00	1057	4:16:13	1199
3	3. listopad 2017 00:00:00	4. listopad 2017 00:00:00	285	2:34:11	571
4	4. listopad 2017 00:00:00	5. listopad 2017 00:00:00	4948	21:01:03	1922
5	5. listopad 2017 00:00:00	6. listopad 2017 00:00:00	5284	22:25:19	1538
6	6. listopad 2017 00:00:00	7. listopad 2017 00:00:00	4945	18:33:51	1846
7	7. listopad 2017 00:00:00	8. listopad 2017 00:00:00	4141	17:43:11	2306
8	8. listopad 2017 00:00:00	9. listopad 2017 00:00:00	3988	18:18:17	3046
9	9. listopad 2017 00:00:00	10. listopad 2017 00:00:00	3153	16:56:39	4388
10	10. listopad 2017 00:00:00	11. listopad 2017 00:00:00	4204	19:15:42	2337
11	11. listopad 2017 00:00:00	12. listopad 2017 00:00:00	5161	20:45:36	1868
12	12. listopad 2017 00:00:00	13. listopad 2017 00:00:00	4961	24:06:22	4929
13	13. listopad 2017 00:00:00	14. listopad 2017 00:00:00	4535	18:31:19	3662
14	14. listopad 2017 00:00:00	15. listopad 2017 00:00:00	4792	21:39:16	1294
15	15. listopad 2017 00:00:00	16. listopad 2017 00:00:00	3937	19:05:03	2567
16	16. listopad 2017 00:00:00	17. listopad 2017 00:00:00	4593	21:50:39	2399
17	17. listopad 2017 00:00:00	18. listopad 2017 00:00:00	4911	20:50:07	1183
18	18. listopad 2017 00:00:00	19. listopad 2017 00:00:00	2248	9:29:25	1846
19	19. listopad 2017 00:00:00	20. listopad 2017 00:00:00	3609	21:19:57	3048
20	20. listopad 2017 00:00:00	21. listopad 2017 00:00:00	456	3:00:00	92
21	21. listopad 2017 00:00:00	22. listopad 2017 00:00:00	1738	10:50:37	1633
22	22. listopad 2017 00:00:00	23. listopad 2017 00:00:00	3760	17:15:33	5681
23	23. listopad 2017 00:00:00	24. listopad 2017 00:00:00	4917	21:38:25	1723
24	24. listopad 2017 00:00:00	25. listopad 2017 00:00:00	4484	20:07:44	1900
25	25. listopad 2017 00:00:00	26. listopad 2017 00:00:00	4293	15:30:59	2377
26	26. listopad 2017 00:00:00	27. listopad 2017 00:00:00	2190	9:39:10	1399
27	28. listopad 2017 00:00:00	29. listopad 2017 00:00:00	69	5:11:14	181
28	29. listopad 2017 00:00:00	30. listopad 2017 00:00:00	3566	22:59:02	3157

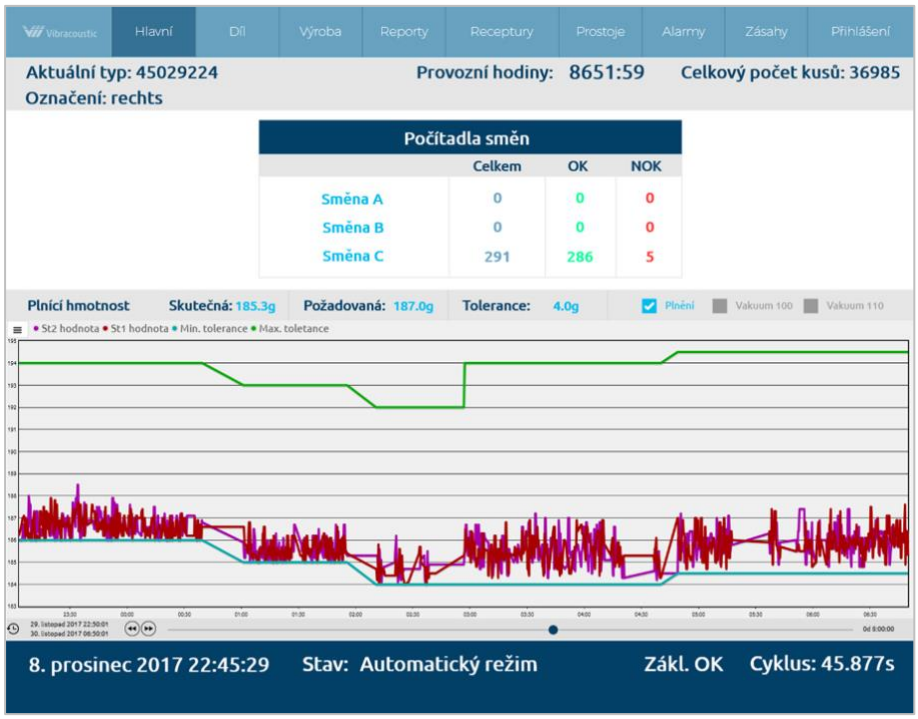
Picture 3 - Production report for certain time period

In this section, all recipes are saved. If a new order shows, maintenance adds a new parameter to the table, connects it to the PLC and the production line is ready to create this new component. This change is obviously written to the section Zásahy (user actions).



Picture 4 - Recipe setting for a specific component

The status of the production line, the production cycle, the amount of manufactured OK/NOK components are seen in this screen. The most important parameter should be the stability of the system (red graph).



Picture 5 – Main page

The list of alarms shows where the problem was. This data is easily analysed and that helps to optimize the production.

Picture 6 – Alarm system

Currently, the access to the system is granted to approximately 25 employees. Each of them have specific and limited options to change the settings or to influence the production elsewhere.

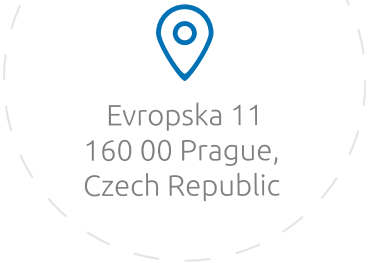
THE ADDED VALUE

*„Our the biggest success is definitely the **average time reduction in production of one piece by 12 %** while **increasing productivity of the line by 10 %** (from 75 to 85 %). In the amount we produce each hour, it is an enormous saving "* commends the technical director – Michal Pavlu.

The cooperation of both companies was very flexible and fast. The project was ordered in April 2017, the first data was collected and evaluated within 4 months of the project assignment.

CONCLUSION

The deployment of the mySCADA visualization in the operator's panel brings huge time and money savings as well as increasing the productivity (by 10 %). The manufacturing company plans to implement this controlling and visualization system in other production lines throughout 2018. Based on the time presumption, the implementation will take approximately 1 month for all chosen lines.



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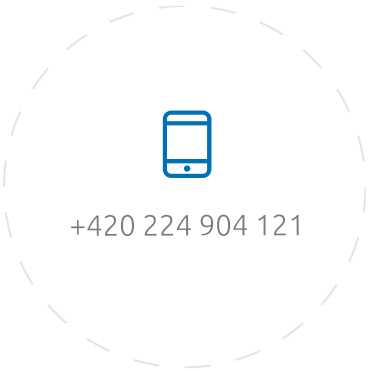

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