

Project Technical Assistance

Standardization in Industrial Automation

Beneficiary:

- Ministry of Economic Development of Ukraine, Department of Industrial Policy
- Association of Industrial Automation Enterprises of Ukraine (APPAU)

1. Background

Today, the landscape of Industry 4.0 standards includes about 40 IEC/ISO standards, all they are not available in Ukrainian legislation. Some of them belong to area of security (incl. cyber-) and safety of critical infrastructure (power stations, railways, airports, defense enterprises and so on). In 2017, APPAU created the Technical Committee 185 'Industrial Automation' that deals just with 6 of such standards. But all those works are based on volunteer principles and are very hard to accomplish in necessary scope of work. Experts are not motivated as well as leaders of 6 groups.

For 2 years, APPAU tried to involve universities staff but also without success. The State cannot provide any actionable support to cope with that issue while the budget of APPAU is quite limited. The APPAU's management plans to monetize in the future part of such work and documents (like white papers, training, guidelines and so on), and promote experts.

An effective campaign rising awareness of standards users regarding issues and benefits of using standards would be a catalyst to market situation change.

2. Target audience

Target audience includes but not limited to:

1. Mid- and large enterprises in Manufacturing, Energy, Utilities and Transport having departments of specialists of Control systems & IT (briefly, 'EU' that means End Users).
2. Control System and IT-integrators (CSI) that are typically in charge of commissioning of control system.
3. Software and hardware developers who develop new products targeted at Industry 4.0 (SWD).

3. Standards in promotion

Next 7 standards in relation with Industry 4.0 are a priority. All they are not used in Ukraine, as well as there is no analogue of them from the old GOST standards. So far, together they make for basic level for Industrial application for both end users, as well as integrators and developers.

	Name of standards	Subject	Reasons for implementation
1	IEC 62443	Cyber-security in control system	To manage high vulnerability to cyber-attacks
2	IEC 62264	Enterprise-control system integration	To standardize information flow across various system and help machines from different vendors to work together in operations (i.e. interoperability)
3	IEC 61508	Functional safety in control systems	To setup safety levels in many critical applications
4	IEC 61512	Automation in batch processes	To setup automation framework for batch processes
5	IEC 62832	Industrial-process measurement, control and automation	To transfer information easily from different stages of manufacturing (e.g. design stage to prototype & development stage)
6	ISO 22400	Manufacturing KPI	To manage operational efficiency and effectiveness
7	ISO 50001	Energy management systems	To reduce energy consumption in operations

All the mentioned standards are under responsibility of the Technical Committee 185 (TC185), except for #7. This one is managed by TC48.

Target audience of these standards includes but not limited to:

1. Mid- and large enterprises (briefly, 'EU' that means End Users) in Manufacturing, Energy, Utilities and Transport having departments of specialists of Control systems & IT, and Energy management
2. Control System and IT-integrators (CSI) that are typically in charge of commissioning of control system.
3. Software and hardware developers who develop new products targeted at Industry 4.0 (SHD)

2. Objectives, purpose & expected results

The 3 main objectives of the project are specified as follows:

1. To move status of the 7 mentioned standards to the **official Ukrainian legislation level** (local DSTU).
2. To develop a **promotional set of basic guidelines of standards on Ukrainian** including:
 - a. 1 white paper about a standard (so far, at least 7).
 - b. Short version of standard description (basic guidelines).
3. To raise awareness and interests of target audience to the set of standards that include the following KPIs:

	KPI	Value
1	Number of engaged persons (downloads of promo-set)	800
2	Number of organizations that followed educational webinars	> 150
3	Number of organizations that bought standards	>50
4	Number of CSI and SHD using standards	>20

Expected consecutive results and benefits

- Start of real implementation of the mentioned standards in Ukraine.
- Decreasing potential risks and vulnerability of cyber-attacks for critical infrastructure on Ukraine. As well as safety risks.
- Start of creating scalable service offer from APPAU/TC185 and partners 'around standards' (promotional information, translated standards themselves, training), that is crucial for their capacities building.
- Rising impact and alignment with commitment of Ukraine to follow EU's Agreement in the part of technical standards.
- Consolidation of the business association with State bodies in common approach to move standards as an important part of innovative industrial ecosystem.

3. Scope of the work

Detailed plan, see in Appendix 1.

4. Project budget

Detailed budget, see in Appendix 2.

5. Logistics and timing

The project period lasts from May to November 2019 (7 months).

6. Project partners

Project partners are the following organizations:

- Ukrainian Agency of Standardization (UAS).
- Technical Committee 48.
- Members of Technical committee 185, Ukrainian companies such as:
 - Interpipe.
 - Metinvest-digital.
 - IT-Enterprise.
 - Kharkiv Aerospace University.
 - Kyiv National Food University.
 - Igor Sikorsky Kyiv polytechnical institute.

7. Reports, monitoring and evaluation

The project results are assessed by the following KPI:

1. Quantitative KPI according to requests:
 - a. Number of standards validated to DSTU.
 - b. Number of engaged end users and other stakeholders.
 - c. Number of promotional tools.
2. Qualitative KPI according to requests:
 - a. Level of engagement of target audience per category.
 - b. Level of motivation of experts.

Appendix 1. Detailed scope of work

	Task	Dates	Responsible	Partners	Expected results	Comments
A	Initiation: build project team, define roles of partners, prioritize tasks, engage first end users					
1	Meeting with all 7 experts groups, defining detailed plan for each	May	Project coordinator	UAS	1st version of detailed plans	
2	Engaging additional partners, forming large coalition around issues of awareness Ukrainain End Users on standardization of manufacturing processes. 1st round table.	May	Project coordinator	UAS, Metinvest, Interpipe, TC 48	agreement about common promotion and exchanges	at least 5 partners
3	Preparing / improving communication tools (web-site, 1 brochure)	May			1 site, 1 brochure (100 p.)	
B	Preparing the promotional set					
1	Preparing 7 white papers	May-July	6 experts		7 white papers, 3-5 articles	
2	Translation of standards (1st parts)	May-July	6 experts		translated 1st parts	
3	Design of final basic guidelines	July	Web-designer		7 basic guidelines	
4	Preparing landing pages	August	Web-designer		7 landing pages	
	<i>total</i>					
B	Defining the context and priorities of end users through survey					
1	Preparing and launch of online survey	June	Analyst		online survey	
2	Getting results, discussions	July	Analyst		insights about priorities	
3	Preparing the final analytical report	July	Analyst			
4	Design of analytical report	August	Web-designer			
C	Start of promotional campaign					
1	Preparing the detailed campaign plan	August	Marcom manager			
2	Lead generation campaign (consequence of promotion of different white papers and standards)	Sept-Oct	Marcom manager		800 leads	

3	Serie of 3 webinars & regional seminars	Sept-Oct	Marcom manager		150
4	1 big conference	Nov	Marcom manager	UAS	80 decision makers from industries
D Project evaluation and reporting					
	Preparing final reports		Project coordinator,		
1	Communication of project results	Nov	Experts		
2		Dec	Project coordinator, Experts		

Appendix 2. Detailed project budget

Task	Unit	Unit price (UAH)	Number of units	Number of months	Total (UAH)
A Administrative costs					
1 Project coordinator	hours	450	40	7	126 000
2 Accountant	hours	100	5	6	3 000
3 Translators	hours	150	8	6	7 200
4 Marketing comm manager	hours	200	16	7	22 400
total					158 600
B Administrative expences					
1 Supporting tools (email platform)	pieces	500	1	7	3 500
c Expert expenses					
1 Expert IEC 62264 & 61512	hours	800	50	6	240 000
2 Expert IEC 61508	hours	800	40	6	192 000
3 Expert IEC 62443	hours	800	40	6	192 000
4 Expert IEC 62832	hours	800	50	6	240 000
5 Expert ISO 22400	hours	800	40	6	192 000
6 Expert ISO 50001	hours	800	30	6	144 000
7 Analyst	hours	800	20	2	32 000
2 Translators	hours	150	20	6	18 000
total					1 250 000
D Acitivities (outsourcing)					
1 round tables (coffee-breaks)	pieces	120	20	2	4 800
2 communication brochure	pieces	50	300	1	15 000
3 design of guidelines	pieces	4500	7	1	31 500
4 online survey	hours	450	10	1	4 500
5 design of reports	pieces	5500	2	1	11 000
6 design of landing pages	pieces	2000	7	1	14 000
7 seminars (coffee-breaks)	pieces	120	30	1	3 600
8 conference / room rent 100 psn	pieces	12000	1	1	12 000

9	conference / lunch	pieces	250	70	1	17 500
10	printed version of reports	pieces	30	120	1	3 600
		<i>total</i>				<i>117 500</i>
	TOTAL					1 529 600