

The categories and project ideas

The best 25 ideas were chosen from the 68 applications received. The participants from the countries Germany, Austria, Switzerland, Italy, France, Great Britain and the United States compete against each other in five different categories.

Be curious to see which developer writes the most convincing code and wins the ctrlX developR Challenge.

SIMPLIFY ENGINEERING

Who connects complex processes, systems and applications and makes them quicker, simpler and easier to operate? From IoT solutions and Node-RED to the use of power functions for automating engineering routines.



Country	Project name	Description of project	Mentor from ctrlX World
US	Automation of measurement studies	Automation of the collection and evaluation of measurement studies using library functions.	CODESYS
US	Digital twin via open source	Creation of the digital twin of a system based on open source software.	Cordis
IT	System training through user instructions	Remote controlled car with camera that learns from the user's commands by using reactjs, nodejs, johnny-five and machine learning.	Smart HMI
AT	Platform-independent IDE for PLCs	Integration of ctrlX PLC into a platform-independent PLC programming environment that can also be used to program systems from other manufacturers.	Bosch Blaichach

EXTEND AND CONNECT

Who extends the existing ctrlX AUTOMATION infrastructure in the cleverest, most creative and the most useful way? Everything revolves around extensions, APIs and robotics projects here.



Country	Project name	Description of project	Mentor from ctrlX World
FR	Python library as native interface	Creating a library in Python as a native interface to the ctrlX Data Layer to access all variables.	InUse
DE	IoT solution for wireless sensor technology	Collecting data from wireless sensors using MQTT network and transfer it to the cloud.	Cedalo
DE	Control via hands-free function	Supplementing an existing HMI system with voice control as an additional operating option.	MGA
IT	Smart container solution	Recording of various dimensions of containers to optimize shipping and determine the resulting CO2 savings.	InfluxData
DE	Edge gateway for data linkage	Linking machine data with data from an ERP system via MQTT, OPC UA and REST interfaces.	iteratec
DE	Implementation of visual SLAM	Implementation of visual SLAM (Simultaneous localization and mapping) using a camera app to facilitate autonomous driving.	Rexroth ROKIT
IT	Gateway node with deep learning function	Creation of a gateway node for an IOT system for access and quality control in automated environments.	HD Vision Systems
AT	IoT retrofit solution for injection molding machines	Development of an easy-to-implement retrofit solution that enables a plug-and-play connection into an IIoT system.	infoteam
DE	Integration of augmented and virtual reality	Extension of the ctrlX AUTOMATION framework by the functionalities of augmented reality (AR) and virtual reality (VR).	XITASO
DE	Wireless IO-Link integration	Integration of a wireless IO-Link platform using UPC UA, MQTT and EtherCAT to exchange process data.	ifm

SMARTEN UP AUTOMATION

Who teaches systems to think, work and play independently and without supervision? With AI applications or for example condition monitoring solutions.



Country	Project name	Description of project	Mentor from ctrlX World
DE	Anomaly detection	Monitoring and evaluation of serial processes for anomaly detection using „Isolation Forest“ algorithm.	HUCON
DE	Modernization of record presses	Modernization of the process of pressing vinyl records to make it more efficient and future-proof.	XITASO
US	Intelligent processing of real-time data	Converting real-time data into technical information using an AI system written in Python.	InfluxData
GB	Plug-in module for data quality evaluation	Combination of an app and a custom USB dongle to evaluate the uncertainty of the data.	Bosch Global Software
DE	Intelligent fume extraction for soldering stations	Automation of turning the laboratory ventilation on and off via presence detection to reduce energy waste.	Cedalo
DE	Tap lock with authorization	Equipping tap valves in the chemical industry with bluetooth devices to ensure that they are only operated by authorized staff.	infoteam

EMPOWER THE USER

Who uses the ctrlX AUTOMATION tools most effectively in order to maximize the benefits and simplify operation? From human-computer interaction and mobile automation and robotics to projects with a positive influence on society and our planet.



Country	Project name	Description of project	Mentor from ctrlX World
DE	Supplier-independent IoT solution	Development of a solution for connecting and linking existing plants from different suppliers via predefined interfaces.	iteratec
DE	No-code development environment for IoT apps	Creation of a self-service data analytics platform for developing IoT applications using a no-code framework.	Wittenstein

CREATE YOUR OWN

Who has an idea for a completely new application which goes beyond all imagination and the given categories?



Country	Project name	Description of project	Mentor from ctrlX World
US	Communication gateway for digital twins	Development of a gateway between digital twins and industrial components to exchange commands and data in real time via API.	Cordis
CH	Enhancement of IT security	Increasing information security according to IEC 62443 through advantageous PLC programming practices.	Rhebo
DE	Automated ball collector for table tennis	Configuration of an intelligent device for automated detection and collection of table tennis balls.	HD Vision Systems