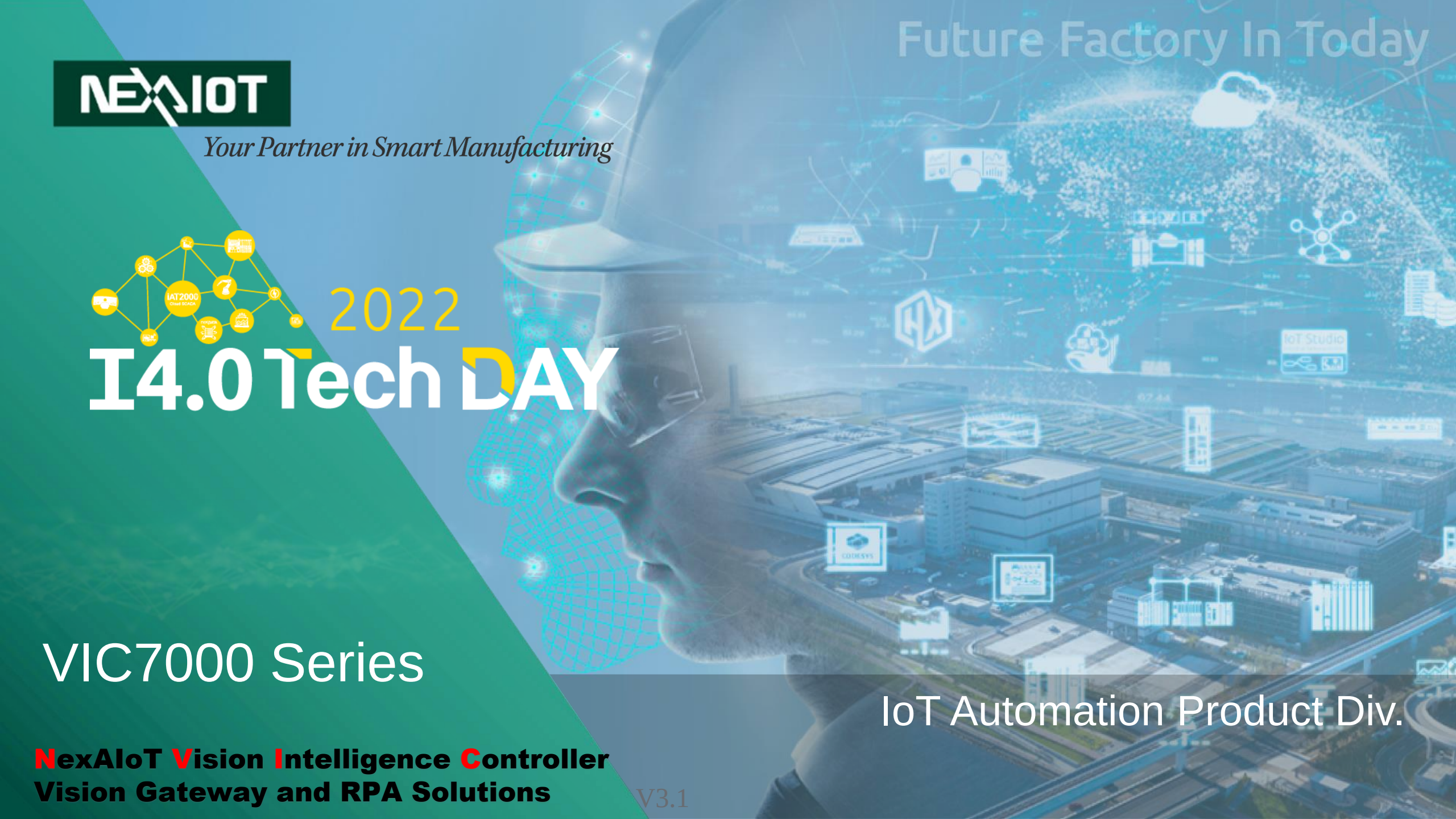


NEXAIOT

Your Partner in Smart Manufacturing

2022

I4.0 Tech DAY

VIC7000 Series

IoT Automation Product Div.

NexAIoT Vision Intelligence Controller
Vision Gateway and RPA Solutions

V3.1

What are VIC and RPA?

Brain
Identify
- Vision Process
  - OCR / Color / Pattern

Think
- Condition
  - VIC-Flow / Python

Eyes
Vision Signals
- Capture Card
  - HDMI / VGA / DVI
- Camera
  - RTSP / Webcam
- Browser
  - Website / Local Desktop

Body
Robotic Process Automation (RPA)
- It can build soft Robots and Inspectors that can learn, imitate, and execute rules-based business processes.

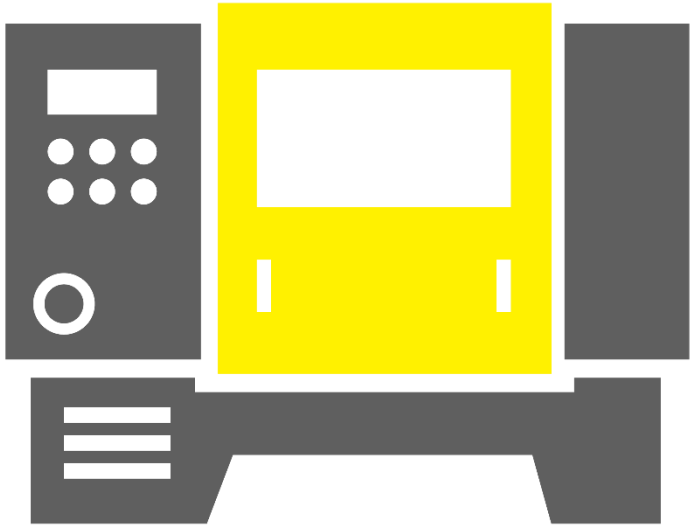
nexVIC

NexAIoT Vision Intelligence Controller
Vision Gateway and RPA Solutions

Why you need VIC and RPA

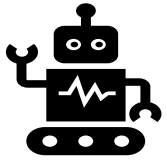
Data extraction is required

- When you have PC based and no Protocol devices need to data extraction, such as OCR, Color, Pattern
- The point is VIC and RPA do not need to install software and do break intrusion



NexAIoT Vision Intelligence Controller
Vision Gateway and RPA Solutions

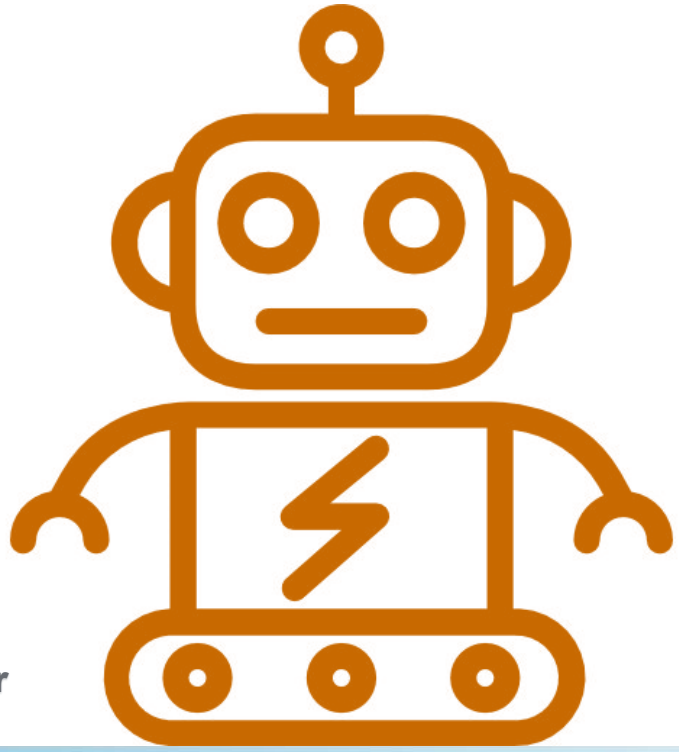
Why you need VIC and RPA



RPA

Process Automation is required

- When your data and process need to reduce manpower and procedures



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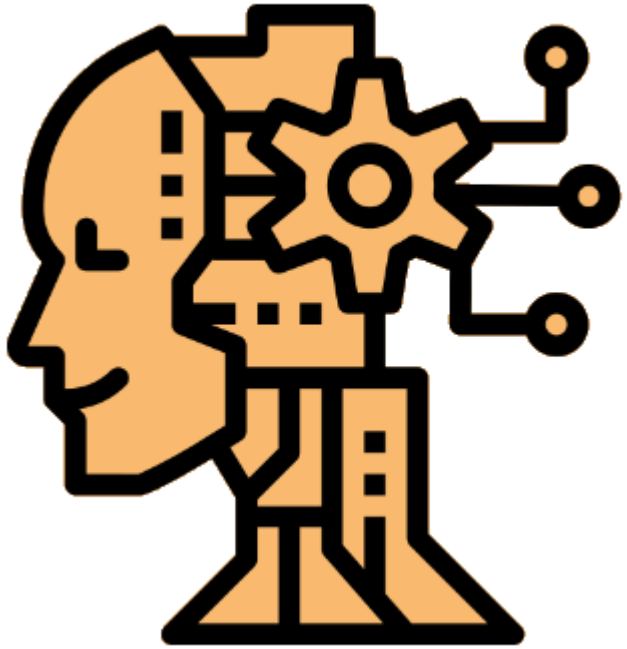
Vision Gateway and RPA Solutions

Why you need VIC and RPA

Python

AI and Data Integration are required

- When your devices data need to build an AI model



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Why you need VIC and RPA

Centralized
Remote Management

Remote insight and control device are required

- When your devices need to remote monitoring and control

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Vision Gateway and RPA Solutions

Why you need VIC and RPA

TCP/IP, REST API
Modbus TCP, SQL, OPCUA

Industrial Protocols are required

- When your industrial communications need to data exchange

SECS/GEM
E5 / E30 /E37

NexAIoT Vision Intelligence Controller
Vision Gateway and RPA Solutions

Why you need VIC and RPA

Email, Line
WeChat, Teams

Real-time data and status are required

- When your engineers need to handle processes

nexVIC

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Vision Gateway and RPA Solutions

What VIC and RPA can offer you

Benefit 1

Remote monitoring and control based on HTML5

- VIC-RPA utilize cross-platform HTML5 web pages to allow users to monitor and operate devices remotely

nexVIC

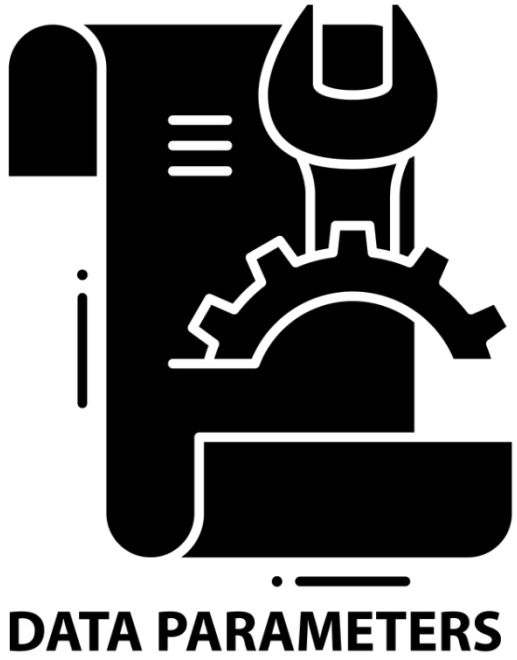
NexAIoT Vision Intelligence Controller
Vision Gateway and RPA Solutions

What VIC and RPA can offer you

Benefit 2

Page Turning and RPA

- Because the data page is not only one page, VIC-RPA can remotely control the keyboard and mouse, and can switch pages automatically or manually to page turning and modify parameters



nexVIC

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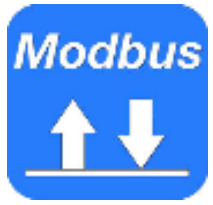
Vision Gateway and RPA Solutions

What VIC and RPA can offer you

Benefit 3

Rich Protocols and communications support

- VIC-RPA provides common communication protocols such as IT, industry, consumer and semiconductor, which can provide different field needs



SECS/GEM
E5 / E30 /E37

Microsoft Teams

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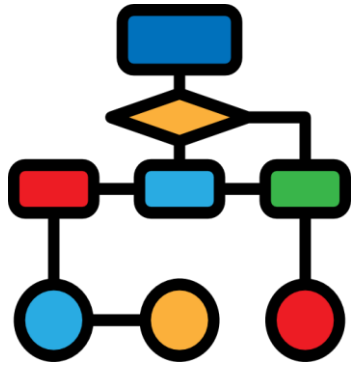
Vision Gateway and RPA Solutions

What VIC and RPA can offer you

Benefit 4

Users can develop their own functions

- VIC-RPA provides flexible development tools such as VIC-Flow and Python, allowing users to easily develop unique functions by themselves incl. AI model.



VIC-Flow

Python

What VIC and RPA can offer you

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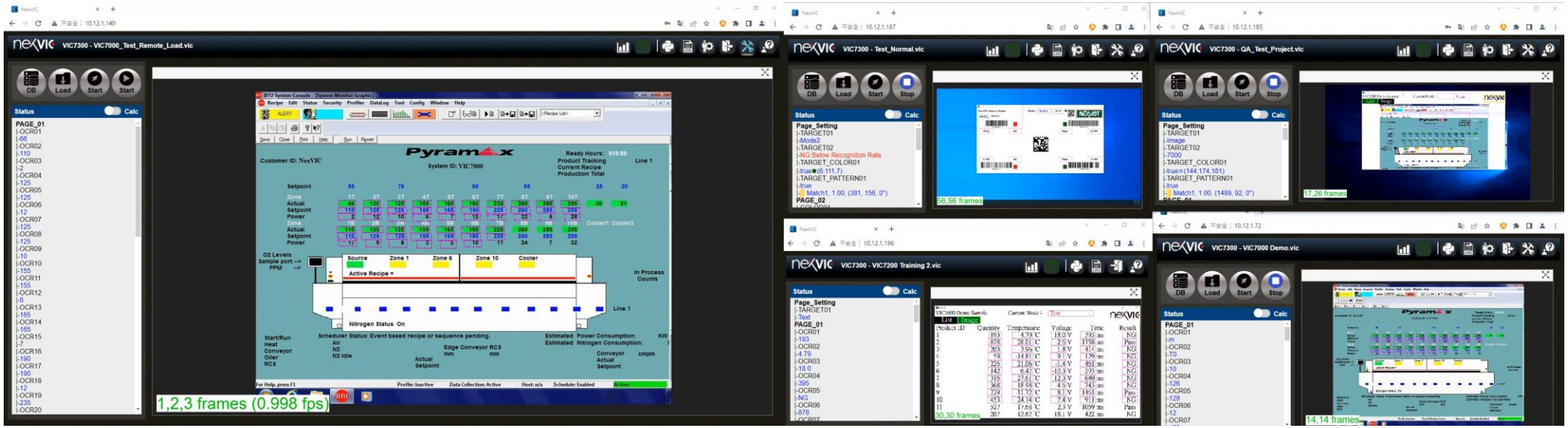
Vision Gateway and RPA Solutions

What VIC and RPA can offer you

Benefit 5

Broadcast Update

- Quickly update VIC settings



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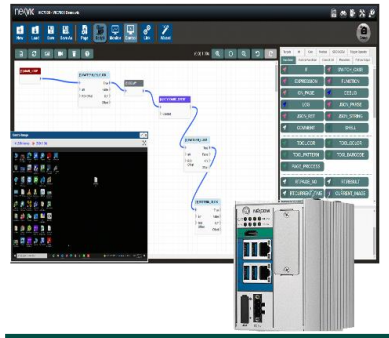
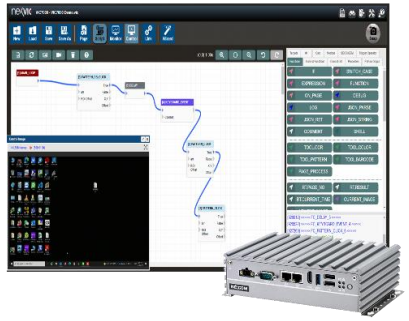
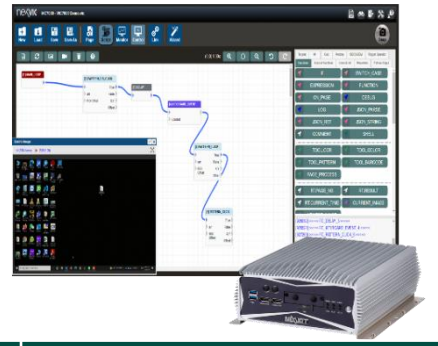
Vision Gateway and RPA Solutions

VIC-RPA Function Table







VIC7001	VIC7200W	VIC7200W-Webcam	VIC7310	VIC7500TMP
Palm-size compact RPA and Data Extracting System	High-Value Vision Record, RPA and Data Extracting System	High-Value Data Extracting System from Webcam	High-performance RPA and Data Extracting System	High-End Multi-CH Vision Record, RPA and Data Extracting System
Key Features • Palm-size • RPA and Data Extracting • SQL-Lite	Key Feature • High-Value • RPA and Data Extracting • Vision-Record and Trend chart • SQL-Lite	Key Feature • Supports USB UVC and IP Cam RTSP • Detect OCR, QR code and other functions • Pattern Location pattern matching	Key Features: • High-Performance • RPA and Data Extracting • MySQL	Key Features: • High-End • Support 2-CH Data Extraction • RPA and Data Extracting • Vision-Record and Trend chart • MySQL

VIC-RPA Function Table

	VIC7001-RPA	VIC7310	VIC7500TMP	VIC7200W	VIC7200W-webcam
MODE	Single Channel		Multi-Channel / page	Single Channel	
Page	5	50	2Channel / 50 Page	20	
OCR	250	500			
COLOR	25	50			
PATTERN	5	10			
BARCODE	X				7200W webcam(20)
TARGET_OCR	5	50		20	
TARGET_COLOR					
TARGET_PATTERN		10			
TARGET_BARCODE	X				7200W webcam(10)
OCR CHAR	100				
All of Module	400	2000	10000	800	
Database	SQL-lite	MYSQL		SQL-lite	
Capture source	mPCIe Capture	PCIe Capture	PCIe multi-capture	mPCIe Capture	Webcam
Max Frame Rate	30				
Vision Source					
browser	V				
RTSP					
Host capture					
Sub-Function					
Barcode	X				7200W webcam(V)
RPA Control	V	V	V		V
DB-trigger	X		V	X	X
Vision Record	X		V		
Trend Chart					
Script	Python				
Python-module	V				
Python-tool-module					
VIC-Flow					
SECS/GEM					
Chinese Inspection					

Case Study– Wafer Edge Grinding Machine-Step1

Wafer Edge Grinding Machine

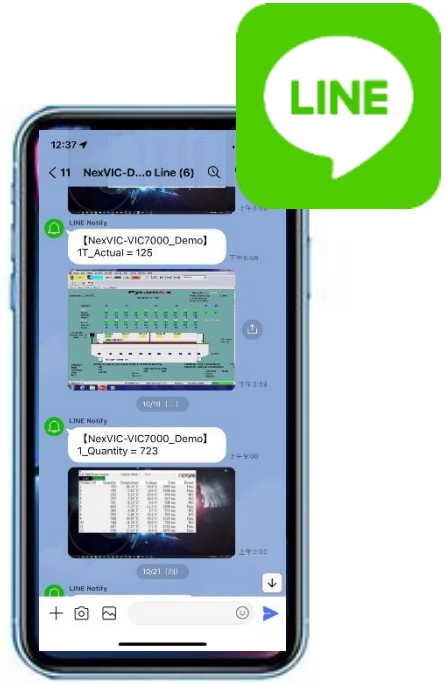
Capture Monitor From VGA

VIC7300

Publish data and screenshots to Line

- Scenario 1
  - When an abnormal signal occurs in the process, VIC-RPA will take the initiative to take screenshots and send Line to inform the process engineer

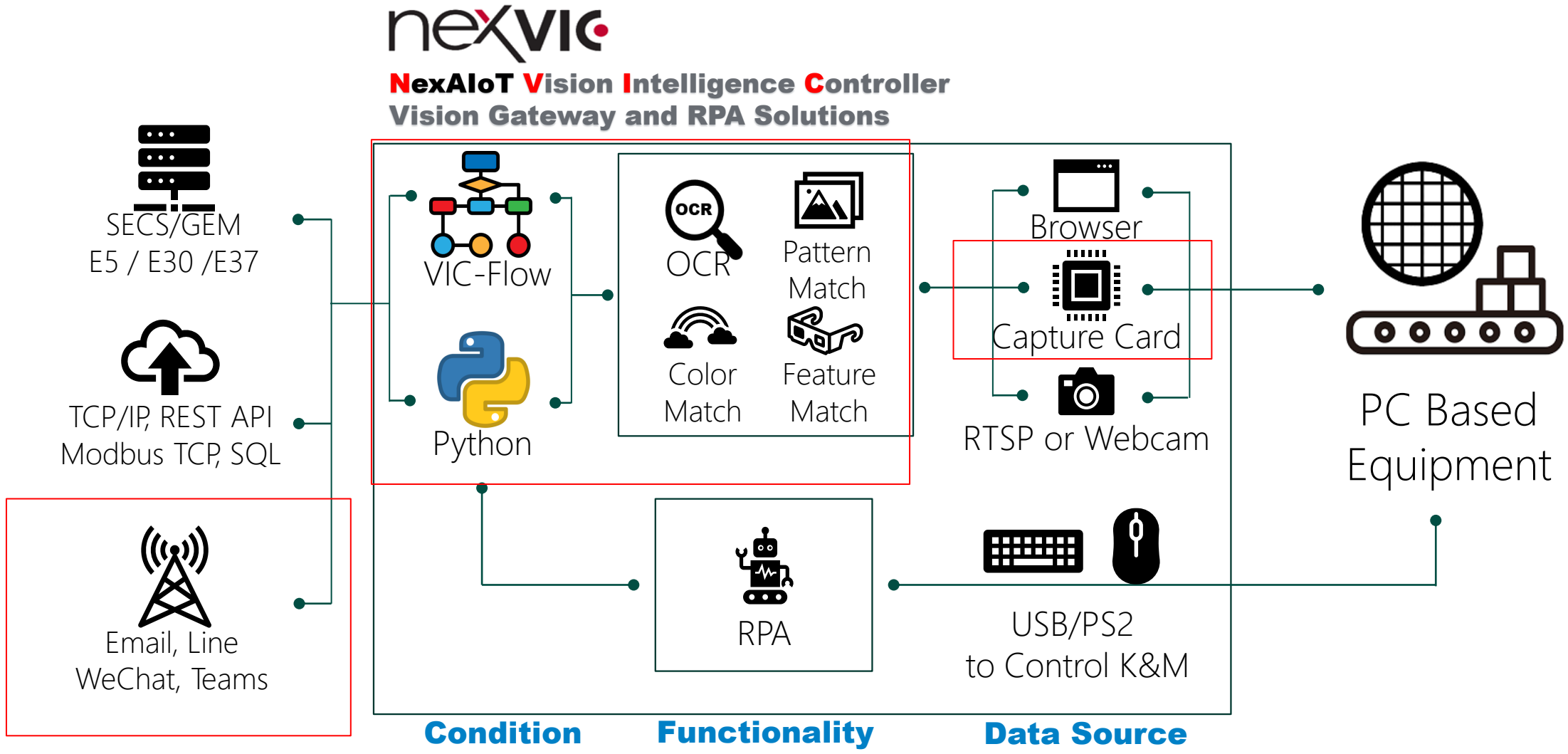
Case Study– Wafer Edge Grinding Machine-Step1



VIC7300

- Scenario 1
  - When an abnormal signal occurs in the process, VIC-RPA will take the initiative to take screenshots and send Line to inform the process engineer

VIC and RPA Architecture-Step1



Case Study– Wafer Edge Grinding Machine-Step2

Wafer Edge Grinding Machine

Capture Card

Data Collection from Display Signal (VGA, DVI, HDMI)

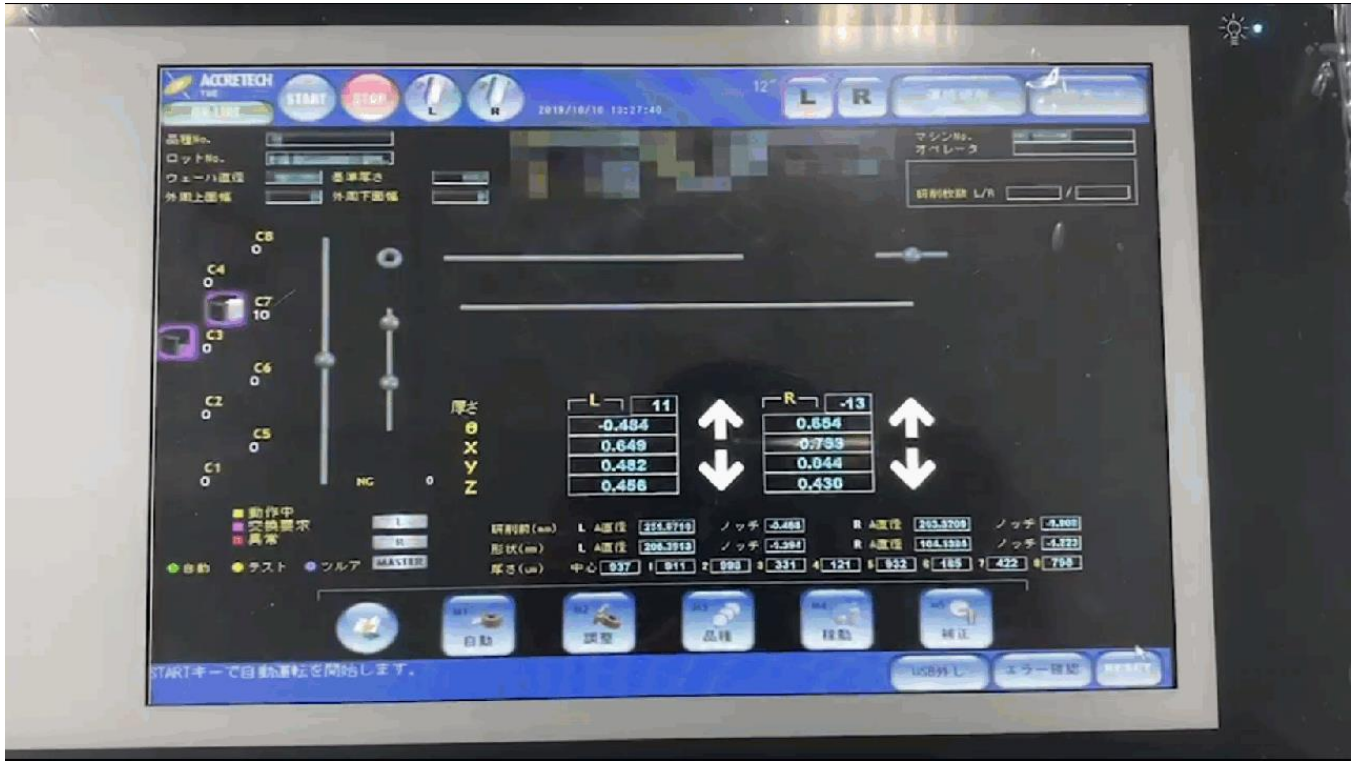
Feedback Control to Keyboard/Mouse

VIC7300

RPA bot

- Scenario 2
  - VIC-RPA uses the vision capture card to extract equipment data, uses OCR technology to digitize equipment parameters, and then uses VIC-RPA's RPA technology to operate and modify equipment parameters.

Case Study– Wafer Edge Grinding Machine-Step2



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Wafer Edge Grinding Machine

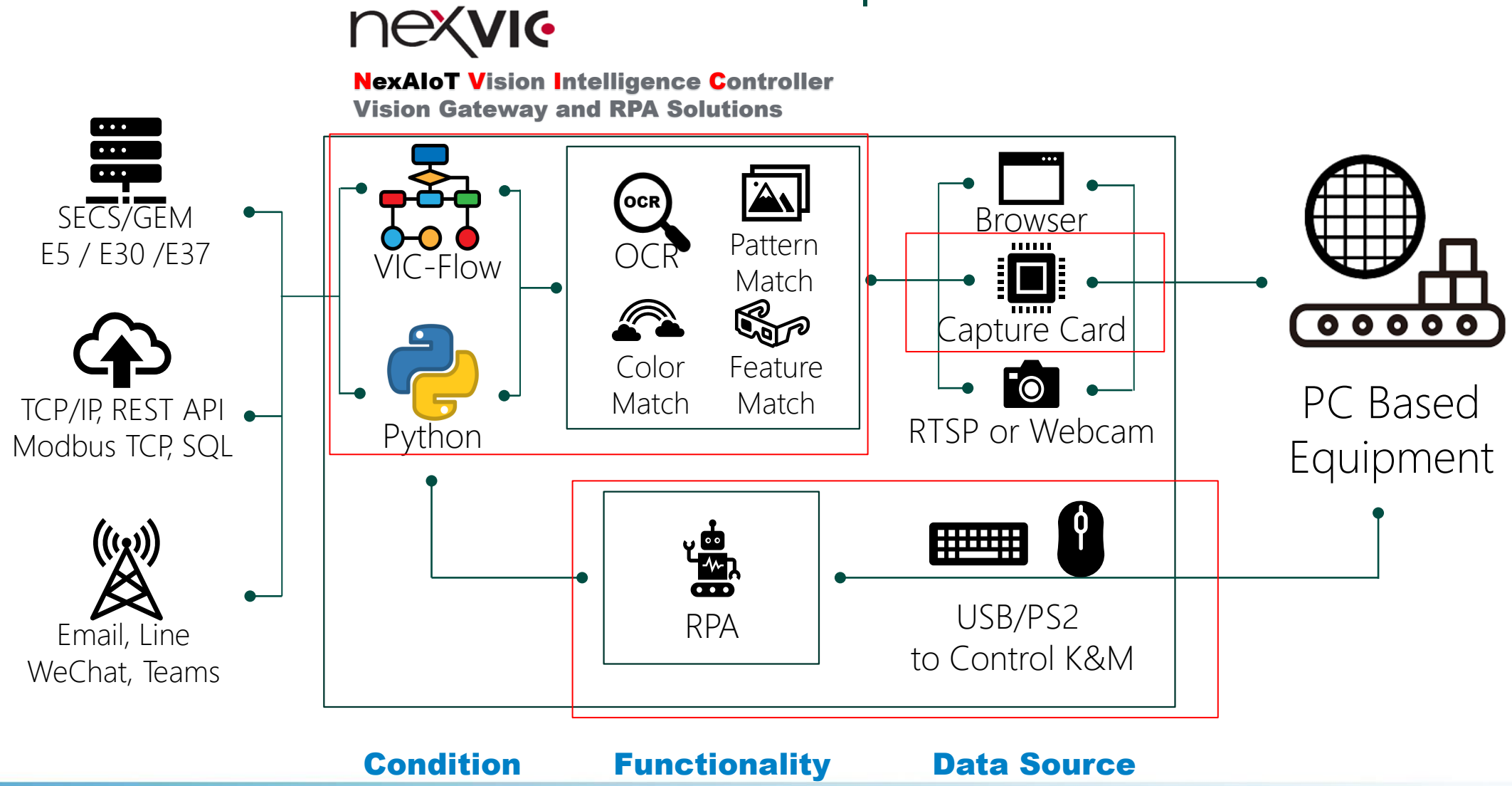
Data Collection from Display Signal (VGA, DVI, HDMI)

Feedback Control to Keyboard/Mouse

VIC7300

RPA bot

VIC and RPA Architecture-Step2



Case Study– Wafer Edge Grinding Machine-Step3

- Scenario 3
  - Statistical Process Control (SPC) uses SQL as a medium to exchange data with VIC-RPA

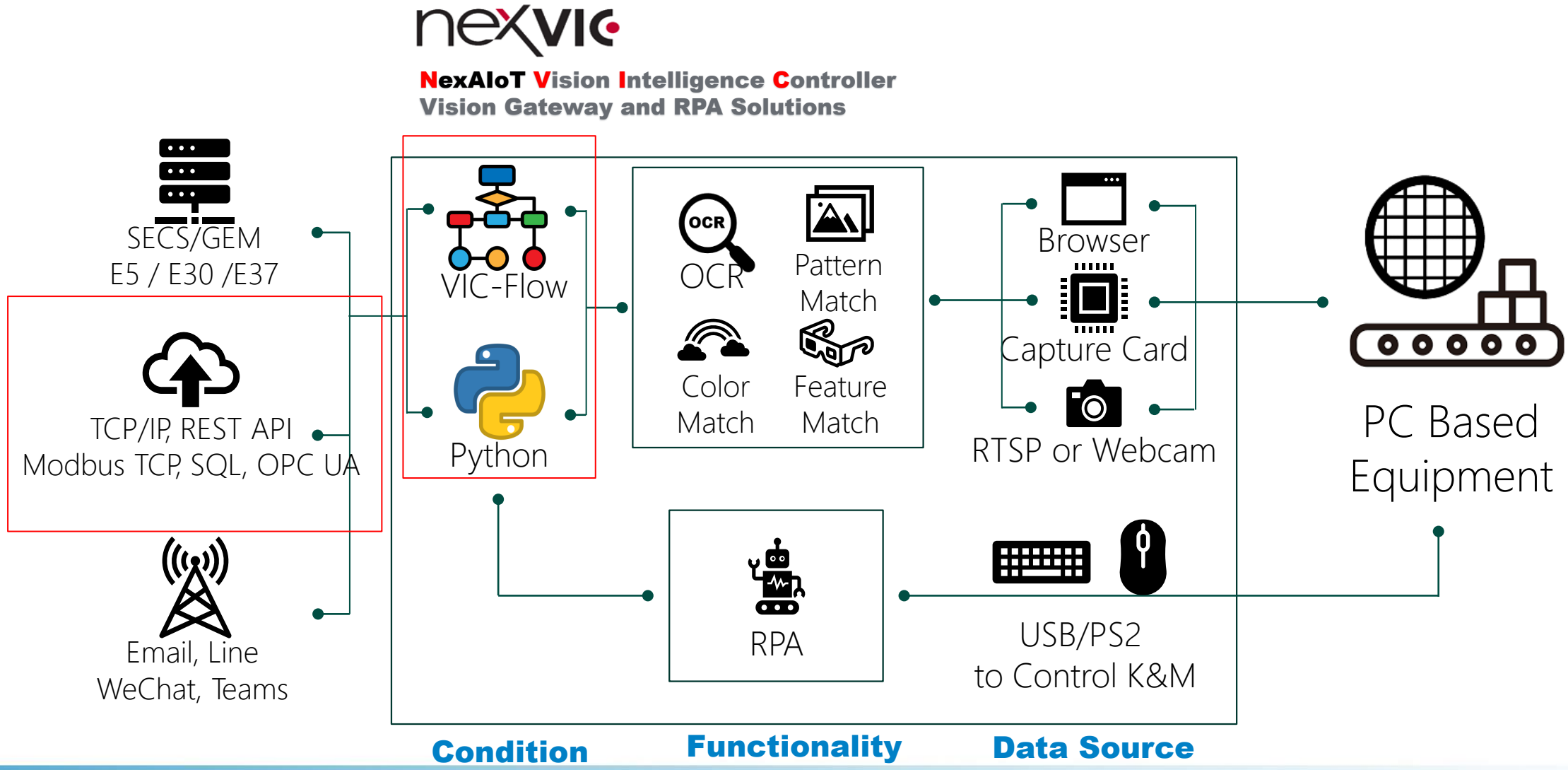
Statistical Process Control (SPC)

Data Exchange

VIC7300

- Benefit
  - VIC-RPA successfully imported Fab 4.0 and SPC with complete RPA application
    - Auto-Tuning and Optimization
    - Reduce filed engineer loading
    - Avoid human key-in mistake

VIC and RPA Architecture-Step3

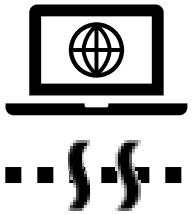


Case Study– Wafer Edge Grinding Machine

ENGINEER

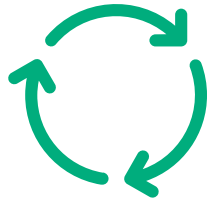
Fab

Centralized
Remote Management



VIC7000

Data
Auto-write



Data
Auto-Read

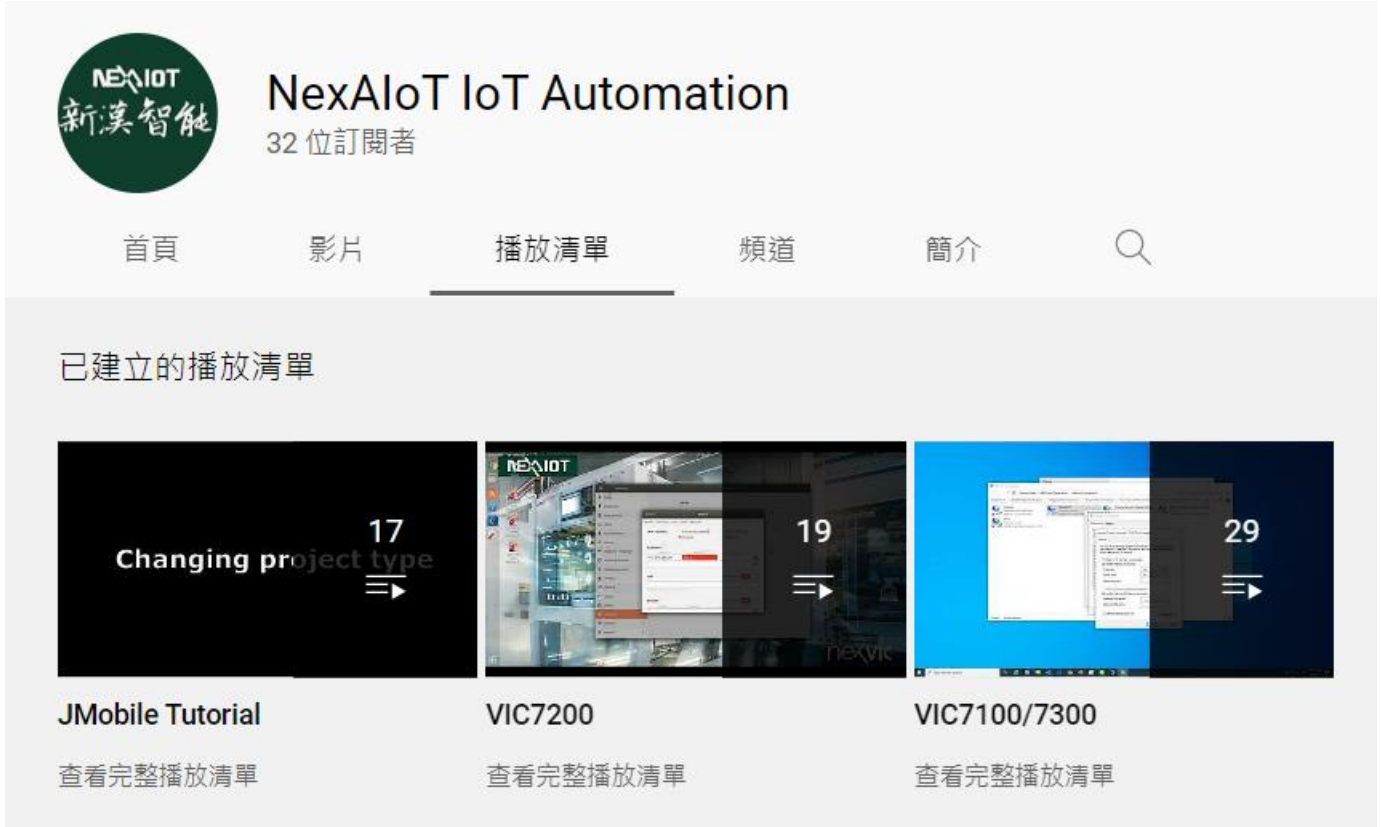
Wafer Edge
Grinding Machine

Statistical
Process
Control

DATA CENTER

YouTube

nexVIC



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