

LECTURE 01A.

RPA. UIPATH PLATFORM

Robotic Process Automation

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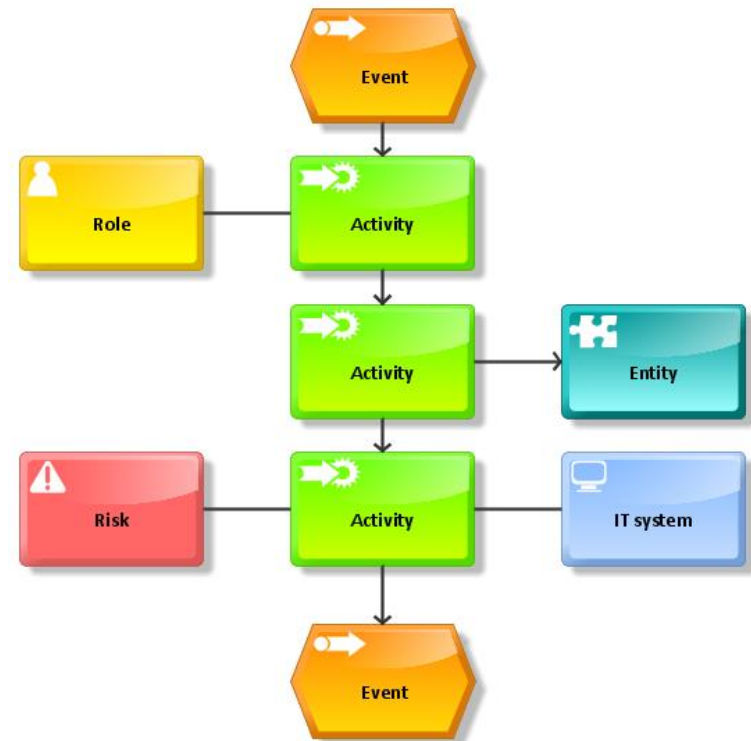


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Business Process. Definition

- A **business process** is
 - a series of steps or **activities** performed by (a group of) stakeholders to achieve a **meaningful goal**;
- E.g.:
 - generate an invoice;
 - monitor an e-mail account;
 - extract data from PDF files;
 - a tea making method;
 - prepare a meal;
 - etc.



Automated Processes. Characteristics

- Processes that may be automated are:
 - Highly manual;
 - Repetitive;
 - Rule-based;
 - Low exceptions rate;
 - Standard readable electronic input;
 - High volume of data;
 - Mature and stable.



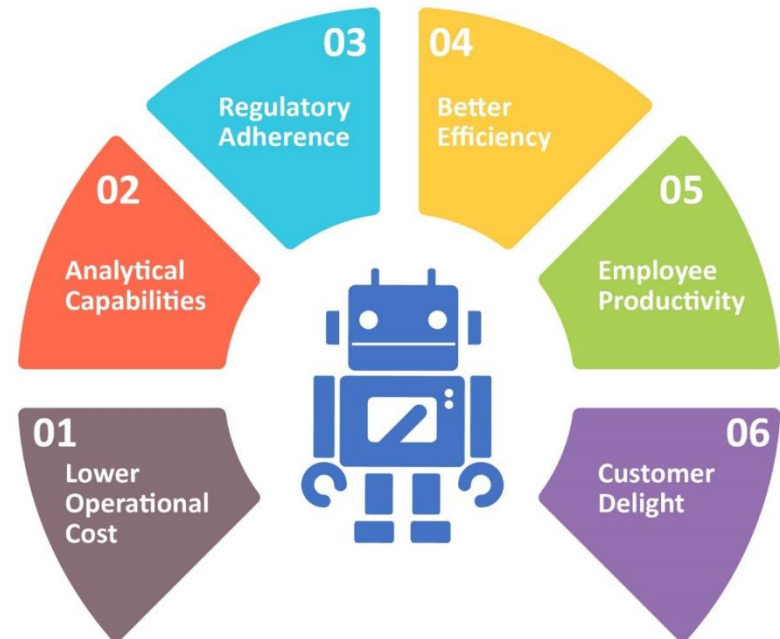
Robotic Process Automation. Definition

- **Robotic Process Automation (RPA)**
 - **Robotic** - robotic entities, i.e., (software) robots, **imitates human actions**;
 - **Process** - a series of actions that lead to significant work or a meaningful result;
 - **Automation** - any activity performed **without human intervention** by a robot.
- **RPA is**
 - the technology used to **automate** processes or tasks performed by **humans**;
- RPA emerges from business process automation (BPA) technology;
- A **software robot** is
 - *a software the automates software use.*



RPA. Benefits

- RPA advantages are:
 - Rapid ROI (return on investment);
 - Enhanced processed;
 - Better customer experience;
 - Eliminated repetitive work;
 - Improved service delivery;
 - Enhanced ability to manage;
 - Cost reduction;
 - Insights and analytics;
 - Non-invasive technology;
 - Increased compliance;
 - Scalability and flexibility.



Software robots take over the **non-value-added tasks** performed manually by humans, while they become **virtual managers** that monitor the robots and handle the exceptions.

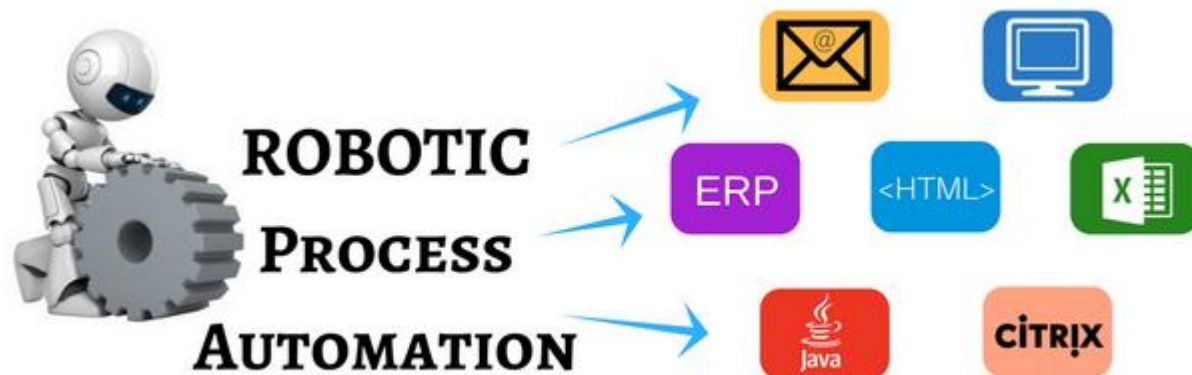
RPA. Applications



	FINANCE AND ACCOUNTING	PROCUREMENT	HUMAN RESOURCES	CONTACT CENTER	INDUSTRY SPECIFIC PROCESSES	
BANKING	●	◐	◐	◐	●	Cards activation Frauds claim discovery
INSURANCE	◐	○	○	◐	●	Claims processing New business preparation
HEALTHCARE	◐	◐	◐	◐	●	Reports automation System reconciliation
MANUFACTURING	●	◐	◐	○	○	Bills of Material generation
HI-TECH&TELECOM	◐	◐	○	◐	◐	Service order management Quality reporting
ENERGY&UTILITIES	◐	◐	◐	◐	◐	Account setup Meter reading validation
	Accounts receivable, Accounts Payable, General Ledger	Invoice processing, from requisition to issue of purchase order	Payroll, hiring, data management	Customer service		
	Legend: RPA ADOPTION EXTENT High ● Medium ◐ Low ○					

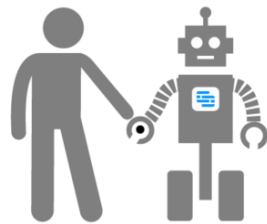
RPA. Capabilities

- RPA systems need to provide the followings:
 - **Communication with the other systems:**
 - screen scrapping or
 - API integration;
 - **Decision making;**
 - **Interface to enable robot programming.**

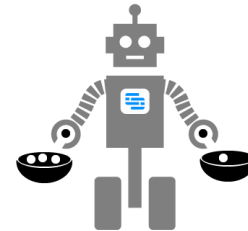


RPA. Type of Robots

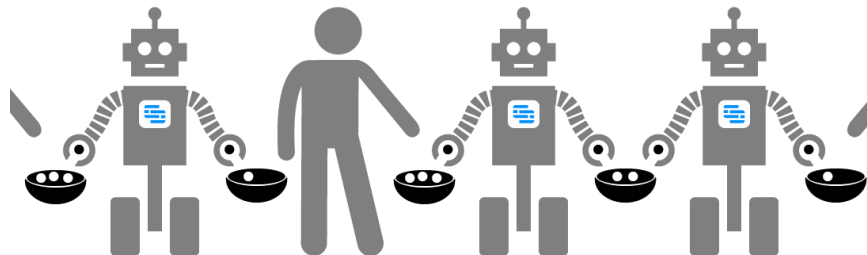
- RPA systems need to provide the followings:
 - **Attended** – requires human intervention while performing the automated process;
 - **Unattended** – possesses decision-making capabilities.
 - **Hybrid RPA** – has combined capabilities of both attended and unattended robots.



Attended Bot Automation



Unattended Bot Automation



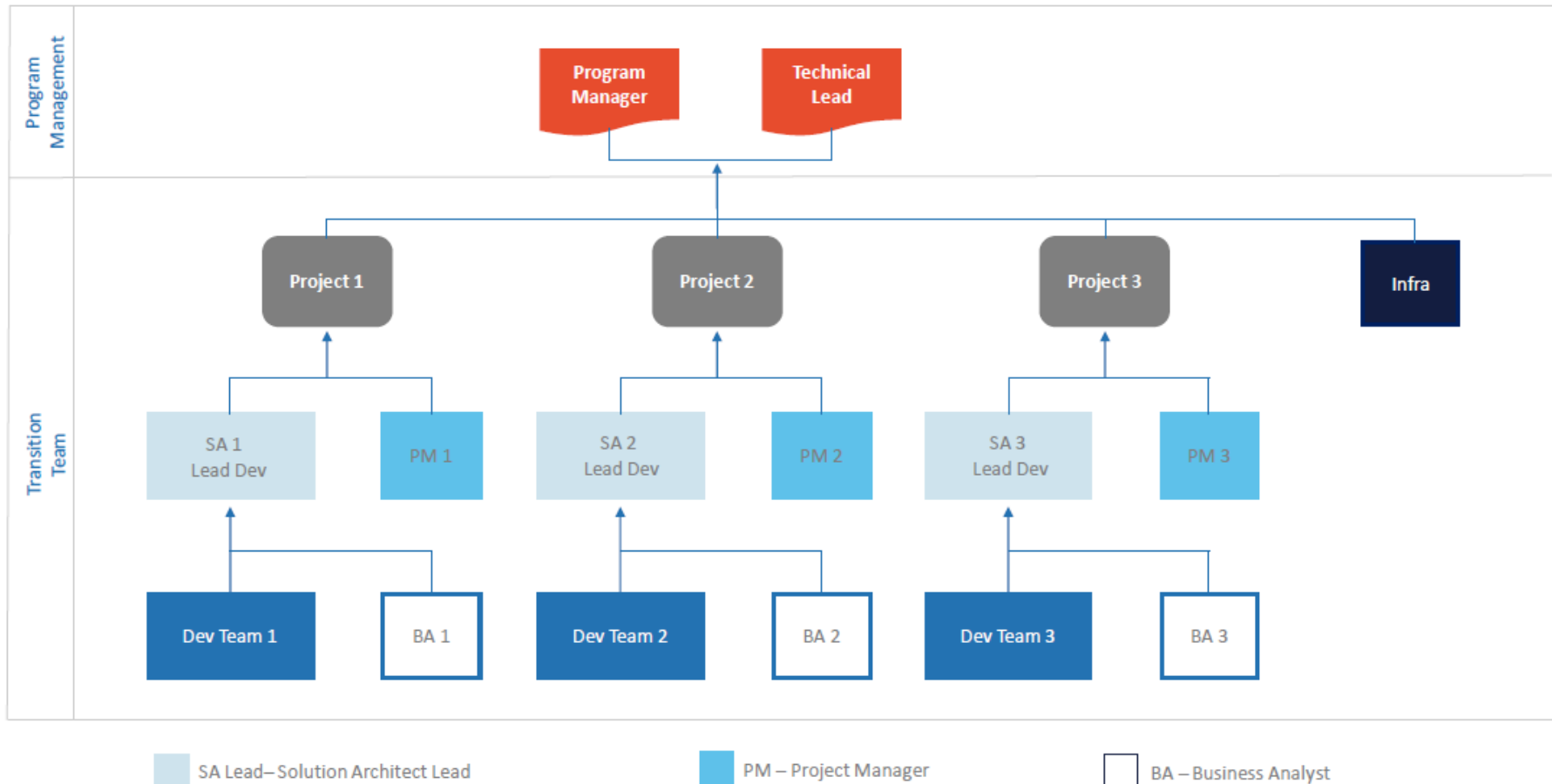
Hybrid Automation

RPA. Tools

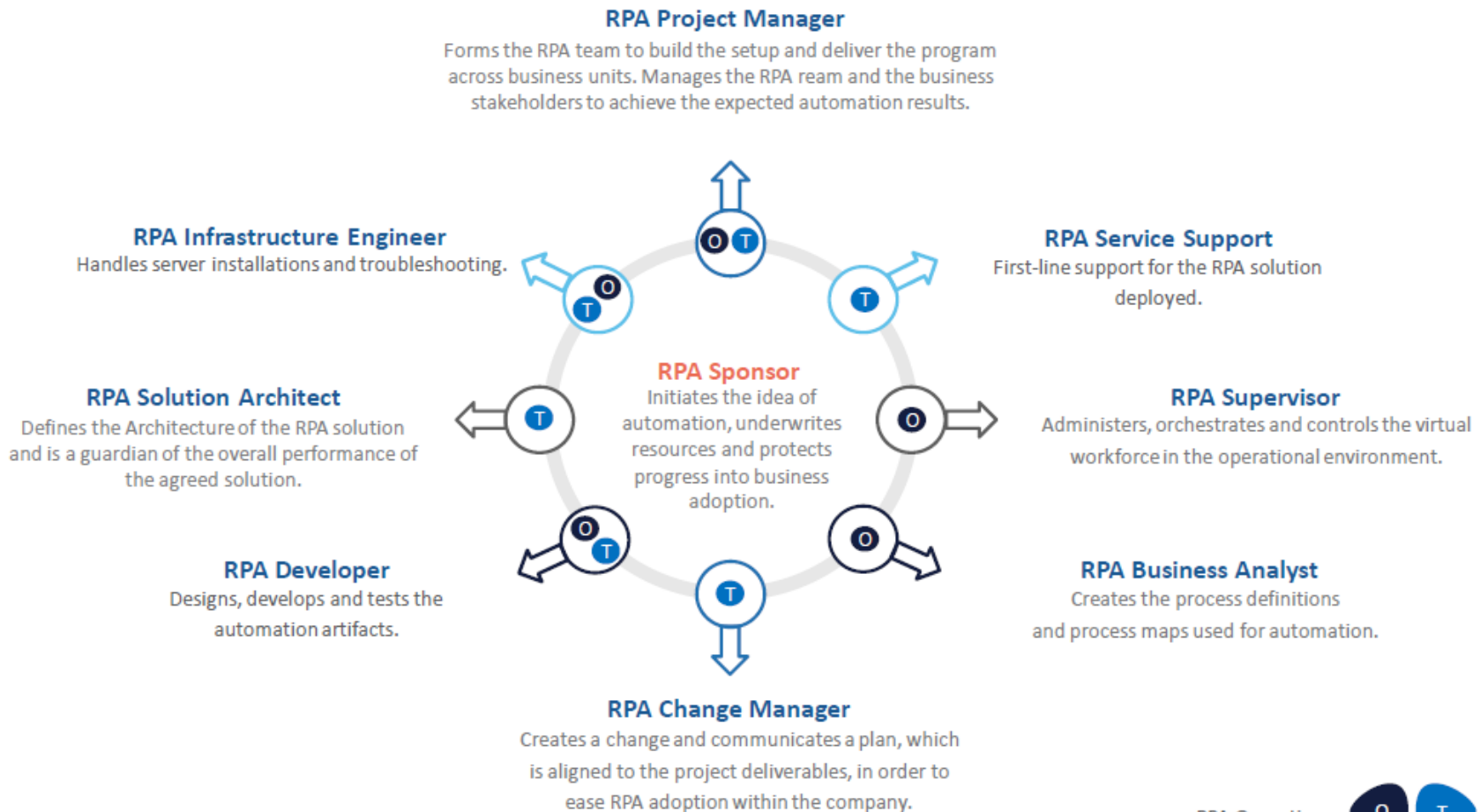
- Tools used in RPA:
 - **UiPath;**
 - **Automation Anywhere;**
 - **Blue Prism;**
 - **Power Automate (Microsoft);**
 - **Pega;**
 - **Nice Systems;**
 - ...



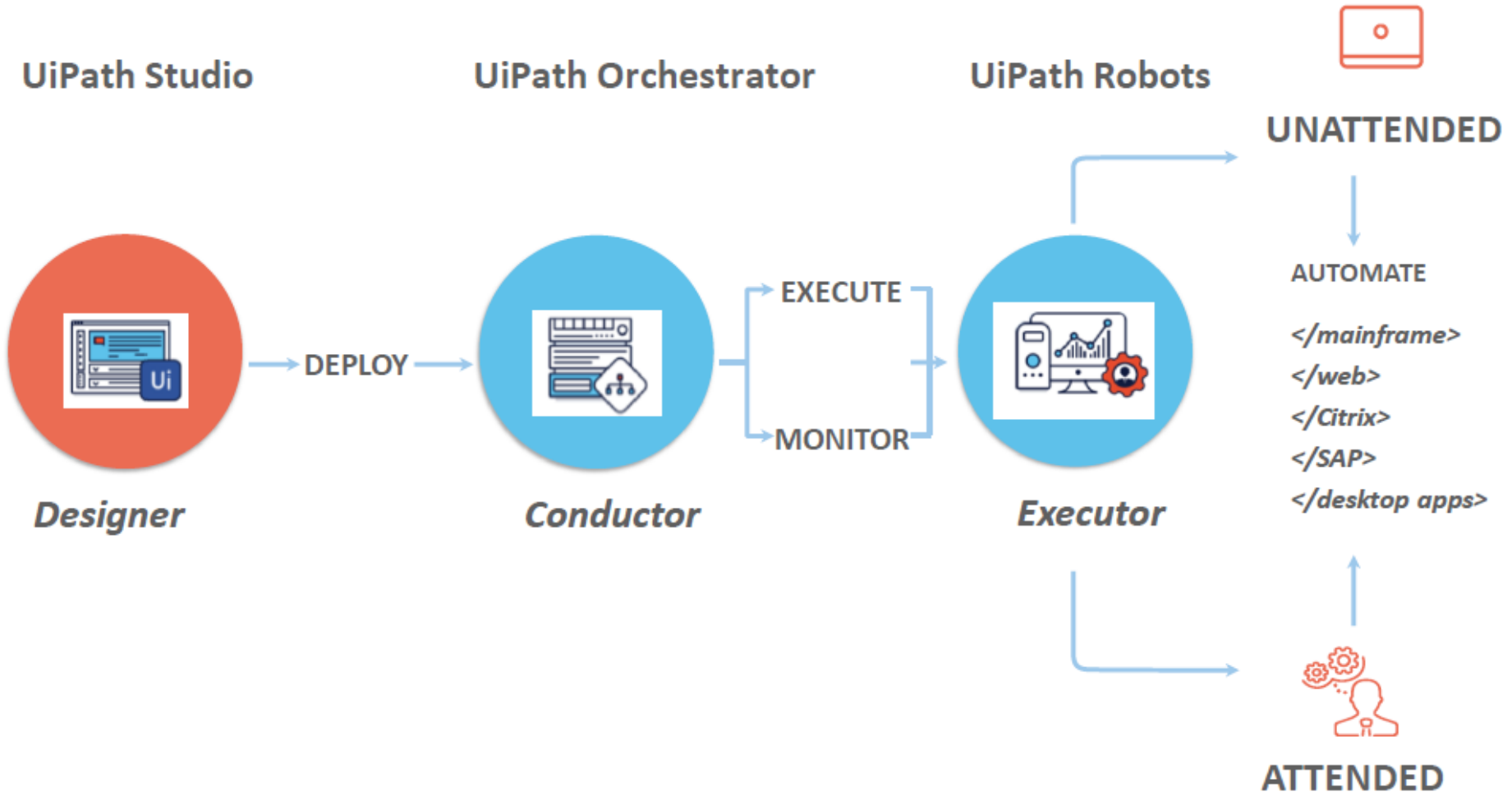
RPA. Project Team Structure



RPA. Robotic Operating Team



UiPath Platform. Components



UiPath Platform. UiPath Studio

- **UiPath Studio:**
 - a design tool that allows to create the diagrams of business processes;
- it is similar to Microsoft Visio;
- it combines:
 - **.NET platform** (stable, highly flexible, modular) and
 - **Microsoft Workflow Foundation**
 - for fast and reliable process automation;
- it allows to create workflows by drag-and-drop actions;
- the projects are executed locally by using the **Start** button.

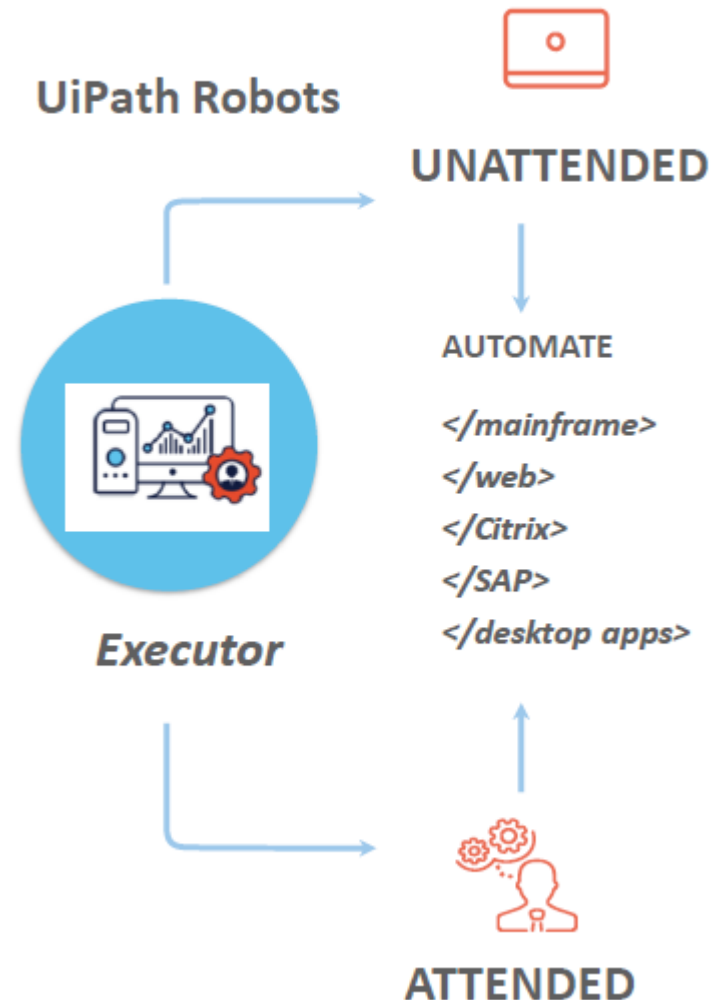
UiPath Studio



Designer

UiPath Platform. UiPath Robots

- **UiPath Robots:**
 - allows to perform the processes designed in UiPath Studio, similar to a human user in the real world;
- **two type of robots:**
 - **attended;**
 - **unattended;**



UiPath Platform. Types of Robots



ATTENDED ROBOT

- Assists human operators.
- Triggered manually and running locally.
- Fit for manual, repetitive, rule-based activities, requires human intervention.
- Communication with Server: bi-directional (restricted).
 - - Robot to Server: Execution logs, automated process upload.
 - - Server to Robot: Automated process version deployment ONLY.

Features:

- Process management (automatic process update/rollback)
- Agent assisted mode
- Centralized logging, reporting and auditing tools.

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UNATTENDED ROBOT

- Doesn't require human intervention.
- Triggered and running remotely.
- Fit for manual, repetitive, rule-based back office activities NOT requiring human intervention.
- Communication with Server: bi-directional (unrestricted).
 - - Robot to Server: Execution logs, automated process upload, robot status
 - - Server to Robot: Automated process version deployment, schedule, start, reset

Features:

- Process management (automatic process update/rollback)
- Asset management
- Centralized logging, reporting and auditing and monitoring

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UiPath Platform. UiPath Orchestrator

- **UiPath Orchestrator:**

- performs the **management** and the **scheduling** of **attended robots**;
- it is a web-based management platform which provides:
 - remote robot control and monitoring capabilities;
 - release management and centralized scheduling methods for robots and processes;
- the centralized **work queues** functionality facilitates the *human-robot collaboration* and *business exception handling*.

UiPath Orchestrator



Conductor

References

- UiPath Docs - <https://docs.uipath.com/>
- UiPath Studio Docs - <https://docs.uipath.com/studio/standalone/2023.4>
- UiPath Forum - <https://forum.uipath.com/>
- UiPath Academy - <https://academy.uipath.com/>
- Gartner, Magic Quadrant for RPA - <https://www.gartner.com/doc/reprints?id=1-2EDXTGOY&ct=230705&st=sb>