*Issue 1/2026*

# The Engineering City Journal

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*The purpose of the Journal is to disseminate knowledge, experience, and best practice in engineering & manufacturing.*
*The articles are written by practicing professionals in the Engineering City (EC) in Yerevan. They cover issues relevant to their projects, operations, and organizations.*
*The articles address the challenges of the time. As such, the Journal is also a chronicle of the evolution of the EC, its companies, and its individuals.*
*It is the aim of the Journal to advance the engineering & manufacturing practice, to enrich the engineering & manufacturing community, and to contribute to the worldwide discourse in engineering & manufacturing.*

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## Manufacturing Management

### . What is Smart Manufacturing



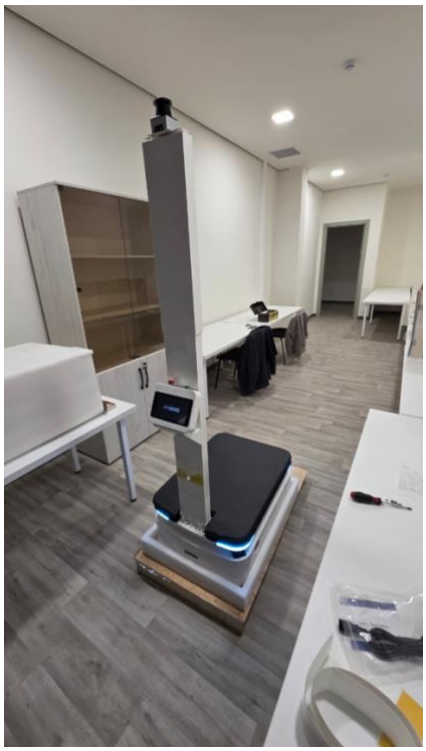
*See video here.*

## ARC News

### . Humanoid Robots and Cobots received at the Smart Manufacturing Lab

We continue receiveing new ARC equipment. The Smart Manufacturing Lab now completed the acquisition of different robots:

1. Transportation Robot
2. Humanoid Robot
3. Two Cobots
4. cRIO Control Equipment
5. Conveyor (to arrive in January)



*Transportation Robot*



*Collaborative Robot*



*Humanoid Robot*

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## . Smart Manufacturing Lab Plan

*by Andranik Meliqsetyan, NIY*

I am thrilled to inform you that we received almost all equipment for the smart manufacturing lab, and we are about to start the preparation to assemble the lab and start using it, as it was destined to be used. I would also like to inform you that I am stepping in to formally take the leadership and the management of the lab.

As I mentioned we are about to start the work of a lab, which includes few phases listed below.

- Phase 1 will be to identify the right space in EC accelerator building that can give us enough space for the research project.

- Phase 2 will require a team of enthusiastic students with mechatronics and robotics background to participate in the research projects moving forward. Before getting into research projects we will be focused on list of training courses for successful usage of the equipment. So, if you are a student and interested in such an initiative feel free to reach out.

- Phase 3 will kick off the research project which will be formalized during phase 1 and 2 preparations. We already have the list of types of research project that we are looking into, will share more as we move forward.

You can see below the proposal floor plan for the lab located in one of EC accelerator rooms. As you can see, we are targeting research stations and to also having prototyping space which will include typical amenities that such a lab needs for rapid prototyping. The stations will be designed in a way to give us an ability to highlight the closed loop

smart manufacturing in the room, the selected research projects upon their completion will give us ability to observe smart manufacturing in action.

- Control Automation Station with conveyor and Dobot CR5
- Unitree G1 Humanoid Robot research station
- Dobot CR3 Collaborative Robot Station
- Autonomous warehouse robot station
- Rapid prototyping space
- Robots Mobility Area

The room will also have reserved space for additional expansion for research needs.

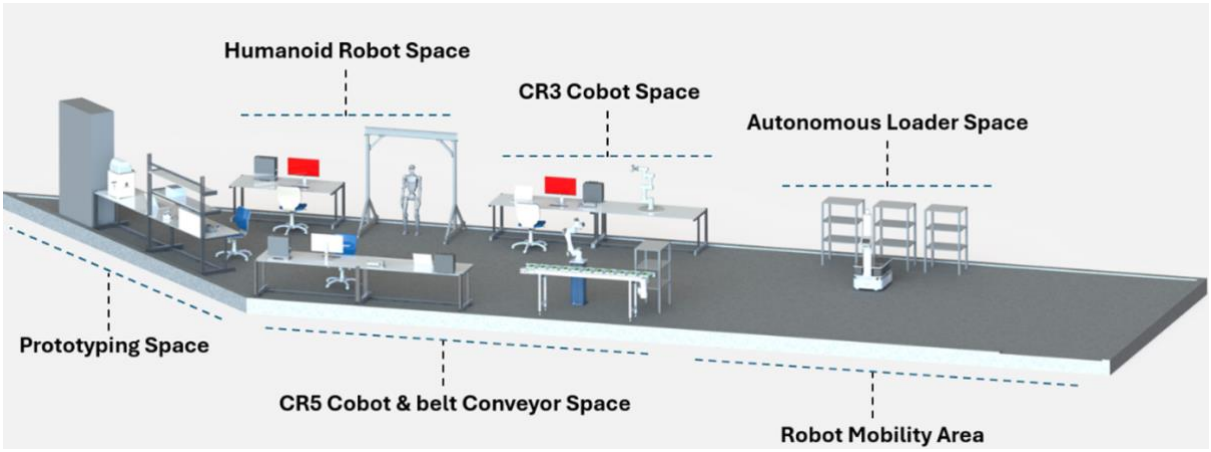



*Fig 1. Proposed Floor Plan*

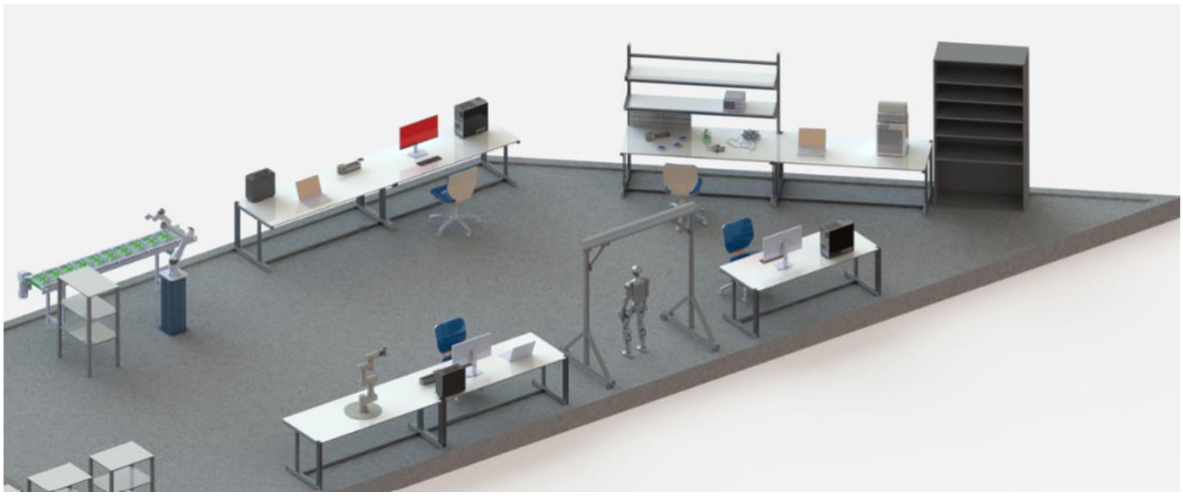


*Figure 2. 3D views into the floor plan with real sizes.*

Type of research projects that will be conducting will vary depending on goals we will set moving forward however to give you an idea about what type of research project we will be diving into, please see below the list of proposed research projects that I collected.

If you are a student with experience in areas like Mechatronics, Robotics, Embedded HW and SW, Python and Machine Learning, LabVIEW, RT & FPGA, feel free to reach me out.

- **Physical AI Research on Humanoid Robot:**
  Mobile manipulation, human–robot interaction, and part/tool handling and delivery
- **Collaborative Robots (CR3 / CR5):**
  Industrial Automation, precision assembly, and inspection with vision control

- **Industrial IoT:**
  Sensor fusion on edge device, safety supervision, and system orchestration
- **AI & Perception:**
  Intent prediction, dynamic path planning, and adaptive speed–separation monitoring
- **Data engineering and Data Science:**
  Industrial Automation and AI powered Robotics data analysis, smart manufacturing observability dashboards.
- **Physical AI-Driven Smart Manufacturing Digital Twins:**
  Augmented and Virtual reality, multi-robot simulation in NVIDA Omniverse Isaac Sim
- **Warehouse Robot:**
  Autonomous shelf transport, storage, and retrieval

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## Armenology

### . Armenian Equivalents to Foreign Words, 3

*Հայոց լեզուն՝ի տարբերություն, օրինակ, անգլերենի և ռուսերենի, հետևողական պայքար է մղում ինքնամաքրման՝փորձելով յուրաքանչյուր օտար բառի դիմաց ստեղծել դրա համարժեք հայերեն տարբերակները։*

*Անի Մակինյան*
*Հայոց լեզվի և գրականության ամբիոնի ղեկավար*
*«Շիրակացու ճեմարան»*

| Օտար բառեր | Հայերեն համարժեքներ |
|---|---|
| անտիպատիա | հակակրանք |
| էլիտա | վերնախավ |
| գրաֆիկ | ժամանակացույց |
| զամշ | թավշակաշի |
| էթիկետ | վարվեցողություն, վարվելակարգ |
| էմոցիա | հույզ, զգացմունք |
| էքսպերտ | փորձագետ |
| թրենդ | միտում, ուղղություն |

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