Development of Force and Motion Estimation Technologies for Acquiring Manipulation Robot Training Data

☐ **Concept: (**TRL: 3~5)

Development of Inverse Dynamics Modelling (IDM) technologies that analyze workers' arm and hand movements and force information, and estimate force and motion data required for manipulation robot training through AI-based algorithms.

☐ **Research objective:**

Development of AI algorithms for estimating force and motion by task using video or non-contact sensors, and construction of pilot datasets for manipulation robot training.

☐ **Research Contents:**

- Development of AI algorithms for estimating force and motion information from data collected using video and non-contact sensors (e.g., behavioral videos, simulation footage, and IMU data) - Establish systematic management and visualization methods for data sources within the supply chain, model lineage and weights, and creation and modification histories.
- **Construction of Skeleton+Force pilot training label datasets for manipulation robots, including task-specific force profiles and tensile/pressure information**

  *** Training label datasets:** *arm and hand motion (skeleton), hand action intent, force, and motion patterns*

☐ **Budget:**

- Year 1('26.07-'26.12) – 236 million KRW
- Year 2('27.01-'27.12) – 472 million KRW
- Year 3('28.01-'28.12) – 472 million KRW

※ Applicants are required to form a consortium with Korean institutions and may receive up to 30% of the budget through Korean research institutions.

☐ **Eligibility**:

- Application is open to any organization.

☐ **Timeline:**

* 22nd May 2026 – Publish call for papers

* 22nd June 2026 – Full proposals are due

* July 2026 – Selection process, Publish results of selection, Project Start