MASTER PLAN

NextGen Innovator 2027

Robotics Hackathon for upper-secondary students in Vietnam. Delivery plan: May to September 2027.

May-Sep	7	Up to 50	Top 10
2027 delivery	work packages	teams in Round 1	to Round 2

Hosted by the Embassy of Israel in Vietnam
Organised by HANISA and GRASP JSC

17 November 2026

Draft for Embassy review

Programme page: video, rules and documents
https://nextgen-innovator-2027.pages.dev

01 Scope and outcomes

This plan covers the delivery of NextGen Innovator 2027 from May to September 2027: Round 1 in the online lab, Round 2 (training with real base robots and mentors, followed by a real-robot indoor delivery competition), and the Grand Final with outdoor racing and indoor racing. It follows the Proposal submitted to the Embassy of Israel in Vietnam; the rules are summarised in Appendix A of the Proposal.

Outcomes

- Up to 50 teams of upper-secondary students (grades 10-12) compete in Round 1 in the online lab; the Top 10 advance.
- Ten finalist teams each receive a base robot and complete 4-5 weeks of Round 2 training with mentors, followed by a real-robot indoor delivery competition (indoor event only, no outdoor event in Round 2).
- A Grand Final with two events, outdoor racing and indoor racing, produces the Champion, Runner-up and Third, and the Engineering Notebook Award.
- A final report is delivered and the organisation contract is closed.
- All organised events take place on weekends (Saturday or Sunday); online-lab activity for teams may run on any day.

02 Work packages

WP	Work package	Owner	Deliverables
WP1	Programme management and communications	HANISA	Plan and schedule, with all organised events fixed to weekends; communications with the Embassy; announcements; programme page; registration communications
WP2	Online lab and Round 1	GRASP JSC	Online lab live (five steps, six SOP gates, certificate); Round 1 scoring; Top 10 list
WP3	Base robots and kits	GRASP JSC with HANISA	Ten base robots with chargers and Arduino Uno; handover record; spare parts; certification check that each robot carries a delivery mechanism
WP4	Arenas: outdoor course and indoor board	GRASP JSC with HANISA	Outdoor black-line loop of about 7.3 m with flags; indoor 1.5 m x 1.5 m board with grid, cargo cubes and depots; inspection station
WP5	Mentoring and Round 2	HANISA with mentors	Mentor roster; kit handover; mentor sessions over 4-5 weeks; engineering notebook guidance; Round 2 indoor delivery competition (physical 1.5 m x 1.5 m board) on a weekend
WP6	Grand Final	HANISA and GRASP JSC; Embassy as host	Event schedule for a weekend date; inspection; both events; judging; awards ceremony
WP7	Reporting and closure	HANISA	Final report; accounts; closure of the organisation contract; final payment request

03 Schedule May to September 2027

ROUND 1		ROUND 2		GRAND FINAL
May	Jun	Jul	Aug	Sep
Launch; registration opens; online lab live	Round 1 closes; Top 10 announced	Kit handover; training kick-off on a weekend	Training; Round 2 indoor competition on a weekend	Grand Final on a weekend; reporting and closure

Month	Activities	Milestone
May 2027	Programme launch; registration opens; online lab opens; Round 1 starts	Online lab live; registration open
Jun 2027	Round 1 continues and closes; scoring and appeals; Top 10 confirmed (any announcement event on a weekend in June)	Top 10 announced
Jul 2027	Kit handover to the Top 10 teams; Round 2 training kick-off on a weekend in July; mentor sessions (live sessions on weekends)	Ten base robots handed over
Aug 2027	Round 2 training continues (4-5 weeks in total); engineering notebooks; indoor board built and tested for the Round 2 real-robot indoor delivery competition, held on a weekend in August; outdoor course built for the Grand Final; Grand Final logistics	Round 2 indoor delivery competition held; arenas ready
Sep 2027	Grand Final on a weekend in September: inspection, outdoor racing, indoor racing, judging, awards; reporting and closure	Grand Final held (weekend date and venue to be fixed with the Embassy); final report

Weekend scheduling

All organised events are fixed to weekends (Saturday or Sunday). Online-lab activity for teams may run on any day. Dates within each month are to be fixed with the Embassy where they depend on the Embassy, in particular the Grand Final date and venue.

04 Roles

R: responsible; A: accountable; C: consulted; I: informed.

Activity	Embassy	HANISA	GRASP JSC	Mentors	Teams
Programme management and communications	C / A for approvals	R	C	I	I
Online lab and Round 1	I	A	R	I	R (compete)
Base robots and kits	I	A	R	C	I
Arenas	I	A	R	C	I
Mentoring and Round 2 (training and indoor delivery competition)	I	A	R (board, scoring)	R (training)	R
Grand Final	A (host)	R	R	C	R
Reporting and closure	I	R	C	I	I

05 Round 1 operations

- **Registration.** Teams of 2-5 students from grades 10-12 register free of charge; submissions are in English. Registration is open from the programme launch.
- **Online lab.** Each team works through the five steps: choose parts, workshop, test room, programming and racing. The test room has six SOP gates (0 operation, 1 traction and grip, 2 braking and inertia, 3 sensor calibration, 4 rain and mud, 5 program test). All six gates passed, with a delivery mechanism fitted, earns an entry certificate. A robot without a delivery mechanism cannot enter. Any design change invalidates the certificate and the tests restart from Gate 0. The race button stays locked until a valid certificate exists.
- **Scoring.** Up to 50 teams are ranked by their results in the online lab race; the Top 10 advance. The detailed Round 1 scoring rule is fixed at the rules freeze.
- **Appeals.** A team may submit a written appeal to the organisers. HANISA and GRASP JSC review it and publish the decision; the appeal period is set in the rules.
- **Technical support.** GRASP JSC monitors the lab and handles defects during Round 1.

06 Round 2 operations

Round 2 has two parts: 4-5 weeks of training with mentors and base robots, then a real-robot competition in the indoor delivery race only, on the physical 1.5 m x 1.5 m wooden grid. There is no outdoor event in Round 2. The indoor rules, scoring, depots and random obstacles are the same as in the Grand Final indoor event, with no weather.

- **Kit handover.** Each of the Top 10 teams receives an organiser-supplied base robot (3D-printed body, four driven wheels with encoders, H-bridge, 3S lithium pack with protection and charger, Arduino Uno). Handover is recorded.
- **Team additions.** Line-sensor array (5-8 IR sensors), collision-avoidance sensors (ultrasonic or IR, at least one type), delivery mechanism (mandatory; for example a servo two-finger gripper with a palm sensor for the indoor event), and optional extra boards such as an ESP32 (not as main controller).
- **Limits.** Mass 1,500 g; bounding box 25 x 20 x 15 cm at start; lithium pack at most 12.6 V (3S) and 3,000 mAh; no remote control during runs; no price cap on parts.
- **Mentor sessions.** Mentors work with the teams for 4-5 weeks on building, sensors, programming and testing. The training kick-off and any live mentor session are held on weekends.
- **Engineering notebook.** Teams keep an engineering notebook in English. It is judged separately for the Engineering Notebook Award and does not change the ranking.
- **Round 2 indoor delivery competition.** Held on the physical 1.5 m x 1.5 m wooden board with the same indoor rules, scoring, depots and random obstacles as the Grand Final indoor event; no weather. Inspection takes place before every run.
- **Delivery mechanism.** Every robot must carry a delivery mechanism, for example the servo two-finger gripper with a palm sensor. It is checked at certification; a robot without one cannot enter.
- **Certificate.** Any design change invalidates the certificate; a robot whose certificate does not cover a weather condition may not run it in the outdoor event of the Grand Final.

07 Grand Final run-of-show

The Grand Final takes place on a Saturday or Sunday. The table is a sample half-day schedule for ten finalist teams. Clock times are indicative and are confirmed once the date and venue are fixed with the Embassy.

Time	Activity
08:00	Arrival and registration of teams and robots
08:15	Inspection: weighing, measuring, battery check
09:15	Opening and briefing; draw of the weather condition for outdoor runs (drawn before the day and equal for all teams in that run)
09:30	Outdoor racing: two runs per team, 2 minutes per run
11:00	Break
11:20	Indoor racing: two runs per team on two layouts, 3 minutes per run; layout published 30 minutes before the run
13:00	Break; engineering notebook judging; score checks
13:30	Results and awards: Champion, Runner-up, Third; Engineering Notebook Award
14:00	Close

Inspection is repeated before every run. Penalties apply as in the rules: 5 points when the robot leaves the line for more than 3 seconds or is lifted after a flip in the outdoor event, and 10 points for each collision in the indoor event. Each event converts to rank points (1st = 10, 2nd = 8, 3rd = 6, 4th = 5, 5th = 4, 6th = 3, 7th = 2, others = 1); the sum decides the Overall ranking, with ties broken by the raw score of the indoor event.

08 Budget and payment schedule

The total budget is USD 15,000, in two parts.

Part	Item	Amount (USD)	Basis
1	Ten base robots	8,000	USD 800 per robot; simplified direct appointment with three quotations
2	Organisation contract with HANISA, GRASP JSC accompanying	7,000	Advance USD 3,500; payment on completion USD 3,500
	Total	15,000	

Payment schedule

Payment	Amount (USD)	Timing
Part 1: ten base robots	8,000	Completed in December 2026
Part 2: advance	3,500	Completed in December 2026
Part 2: payment on completion	3,500	After completion of the programme, from the 2027 budget, which becomes available in September 2027

09 Risk register

Risk	Likelihood	Impact	Mitigation
Grand Final date or venue not fixed in time	Medium	High	Raise at the first approval meeting; target September 2027; reserve venue options
Robot without a delivery mechanism presented for entry	Low	Medium	Requirement stated in the rules and the online lab; checked at certification; robots without it cannot enter
Weekend venue and staff availability for events fixed to weekends	Medium	High	Book venues early for the training kick-off, the Round 2 competition day and the Grand Final; agree weekend dates in advance; reserve alternative weekends
Base-robot or sensor supply delay	Medium	High	Ten robots procured in December 2026; spare parts; reserve kit
Online lab defects or overload during Round 1	Medium	Medium	Load test before launch; GRASP JSC monitoring; manual fallback for scoring
Lithium battery incident	Low	High	Protected 3S pack; supplied charger; battery check before every run; supervised charging
Bad weather on the Grand Final day	Medium	Medium	Weather condition drawn before the day; indoor event unaffected; fallback schedule
Team drop-out or incomplete robot in Round 2 (training or indoor competition)	Medium	Medium	Mentor follow-up; reserve list from Round 1
Disputes over scoring	Low	Medium	Published rules; inspection records; written appeals
Final payment timing	Medium	Low	USD 3,500 due after completion from the 2027 budget available in September 2027; schedule agreed in advance

10 Approvals and next steps

1. Embassy approval of the Master Plan and the schedule in section 3.
2. Embassy to confirm the Grand Final weekend date and venue, target September 2027.
3. Embassy to nominate a contact for approvals and communications.
4. HANISA and GRASP JSC to freeze the rules and release the online lab for Round 1 in May 2027.
5. HANISA and GRASP JSC to report progress to the Embassy after each round.

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