BIOMARKERS DIAGNOSTICS MILESTONES FRAMEWORK

Innovation Maturity Level	Name	Overall Description	Innovation Maturity Level Milestones			
			Clinical	**Market/Business**	**Regulatory**	**Technology**
1	**Need**	**Insights into unmet clinical needs and available solutions**	❑ Unmet need statement ❑ Disease state characterization	❑ Needs screening & selection ❑ Existing solutions characterization	❑ Regulatory familiarization	❑ State-of-the-Art summary
2	**Idea**	**Potential solution to unmet need described, evaluated and selected**	❑ Clinical Workflow scenario ❑ Updated need statement ❑ Envisioned benefit statement ❑ Feedback from 5+ clinical stakeholders	❑ Competitive landscape ❑ Envisioned Value Proposition ❑ Key stakeholders identified ❑ Reimbursement familiarization	❑ Medical device determination (MDR in EU) ❑ Comparable identified	❑ Idea screening and selection ❑ Preliminary Target Product Profile ❑ Biological mechanism of action identified ❑ Institutional IP disclosure
3	**Proof of Concept (PoC)**	**Key component concepts validated in models and value proposition tested**	❑ Feedback from clinical stakeholders in 5+ settings ❑ Updated need statement and workflow scenario ❑ Target outcomes	❑ Competing solutions characterization ❑ Preliminary value proposition ❑ Path-to-Payment plan ❑ Stakeholder map ❑ Business protection model	❑ Preliminary regulatory classification ❑ Preliminary regulatory pathway ❑ Preliminary intended /indications for use	❑ **Key mechanism of action validated** ❑ Updated Target Product Profile (TPP) ❑ Preliminary Freedom to Operate (FTO) Assessment ❑ Updated institutional IP disclosure ❑ Key in-sourcing requirements
4	**Proof of Feasibility (PoF)**	**Feasibility of whole solution demonstrated in models and in feedback from stakeholders**	❑ Feedback on users in 20+ settings ❑ Updated need statement and Use Case scenario/workflow ❑ Updated target outcomes	❑ Feedback from 5+ economic buyers ❑ Preliminary business model ❑ Development plan ❑ Key relationships identified ❑ Business advisory board	❑ Draft essential requirements checklist ❑ Draft product claims ❑ Draft instructions for use ❑ Institutional approval request(s) ❑ Submission pathway defined	❑ Updated Target Product Profile (TPP) ❑ “Works Like” and “Looks Like” packaging prototypes ❑ Essential experiment results ❑ Provisional IP filing & initial FTO review ❑ Key in-sourcing plans ❑ Manufacturing/QMS plan
5	**Proof of Value (PoV)**	**The potential of the solution to work and create value for all stakeholders is demonstrated**	❑ Feedback from 100+ users ❑ Feedback from 5+ KOLs ❑ Animal/first in/with man experiments ❑ Medical advisory board	❑ Key management team committed ❑ Investor ready business plan ❑ Feedback from 20+ economic buyers ❑ Initial Seed Investment ❑ Key relationships formalized	❑ Essential requirements checklist ❑ Application form to competent authority submitted ❑ Clinical Investigation approval(s)	❑ "Works Like, Looks Like, Made Like”, “Made Like” prototypes ❑ Updated TPP & Essential technical experiments results ❑ IP search report

EIT Health is supported by the EIT, a body of the European Union

			❑ Clinical trial endpoints	❑ Incorporation & Founders agreement		❑ cGMP compliant pilot manufacturing process ❑ Key in-sourcing requirements committed ❑ Conference/poster session/paper submitted
6	**Initial Clinical Trials (ICT)**	**Regulated production of prototypes and collection of clinical and economic data**	☐ **Endpoints achieved in Feasibility clinical trials** ☐ Peer reviewed publication(s) submitted	☐ Value quantification ☐ Feedback from 25+ economic buyers ☐ **1st institutional investment**	☐ Data requirements confirmation ☐ Pre-submission filed	☐ cGMPs compliant manufacturing process ☐ Updated TPP & experimental validation ☐ All in-sourcing licensing requirements achieved ☐ **Full IP application**
7	**Validation of Solution (VoS)**	**The solution is shown to be effective and its value to all stakeholders is validated**	❑ **Endpoints achieved in pivotal clinical trials** ❑ Peer reviewed publication(s) accepted	❑ Purchasing intent from 10+ buyers ❑ **2nd round of institutional investment**	❑ Submission of Technical file to regulatory body	❑ Quality assured process validation (cGMP) ❑ Updated TPP & experimental validation
8	**Approval & Launch (A&L)**	**Institutional and regulatory approval received and sales launch**	❑ Training materials & support established ❑ Specialty medical groups review in place	❑ **Initial sales** ❑ Regionalization plans	❑ **Registration and listing** ❑ **CMS/Public Coverage and CPT/DRG code determination**	❑ Finalized cGMP production environment ❑ IP for improvements filed
9	**Clinical Use (Use)**	**The solution is used successfully in day-to-day clinical practice**	❑ Included in local practice guidelines ❑ Peer reviewed publications	❑ **Profitable sales** ❑ New markets launched	❑ Monitoring/ inspections	❑ Improvement plan ❑ Key patents issued
10	**Standard of Care (SoC)**	**The solution is recognised as the standard of care**	❑ Recommended practice by medical specialty	❑ Dominant market share ❑ Health economics study	❑ Product Obsolescence plan	❑ Component Obsolescence plan

For more information on the specific meaning of each of the milestones you can access:
https://gaits.org/web/biomarker-diagnostic/guidance