



The Future Breakthrough in Non-invasive Prenatal Diagnosis

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THE GAP: PRENATAL DIAGNOSIS TODAY

INVASIVE METHODS

Chorionic villus sampling (11–14w)
Amniocentesis (15–18w)



DIAGNOSTIC ROLE
Definitive diagnosis



SAFETY
0.2–1% risk of miscarriage

NON-INVASIVE METHODS

Maternal blood test
(cfDNA)



PAPP-A
free β -hCG



DIAGNOSTIC ROLE
Screening only



SAFETY
No invasive sampling

**Can we
have the
best of both?**

ONE PATHWAY COMBINING
SAFETY AND DIAGNOSTIC CERTAINTY



Prenatal diagnosis faces a fundamental trade-off: safety vs. diagnostic certainty.

Current non-invasive approaches prioritize safety but remain limited to screening, while definitive diagnosis still requires invasive sampling.

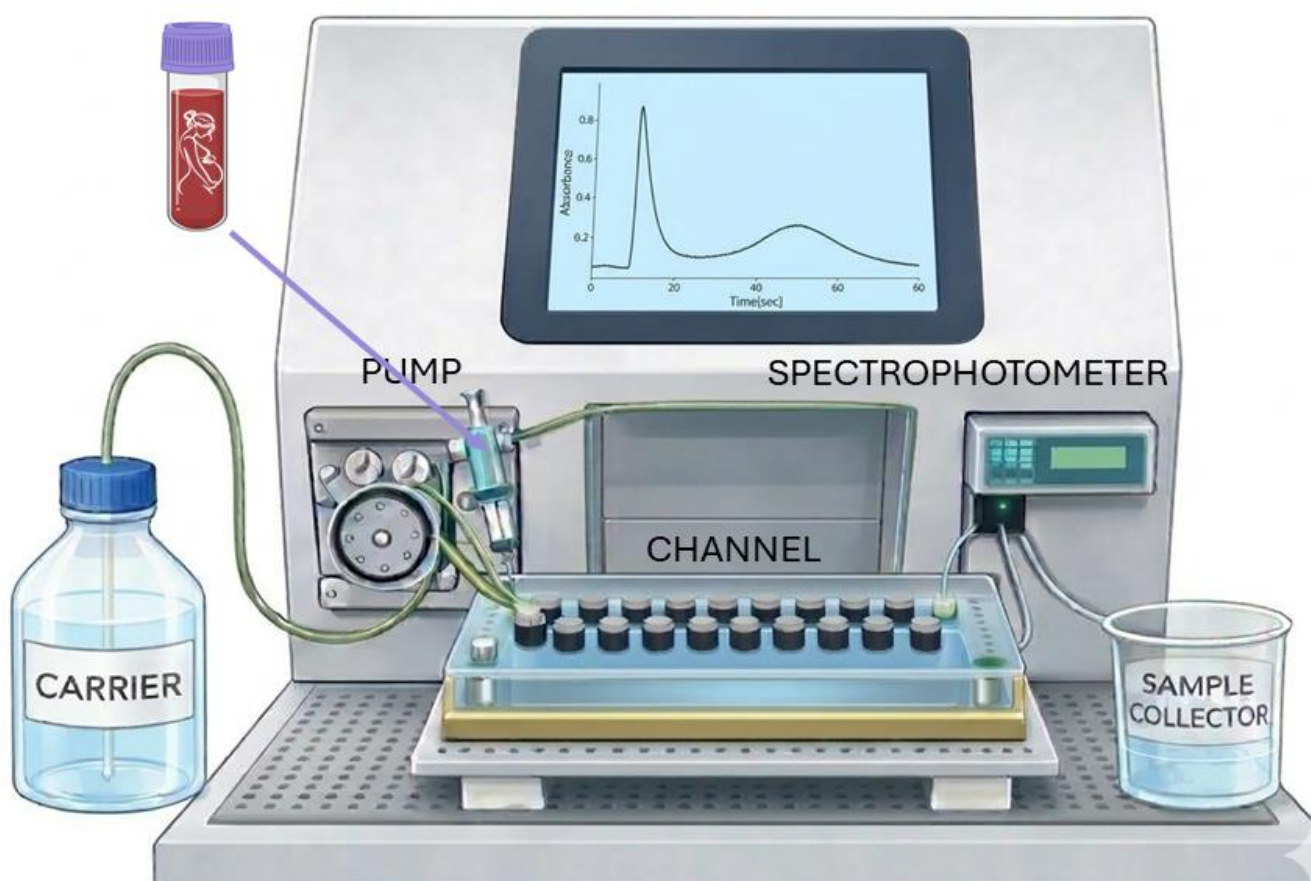
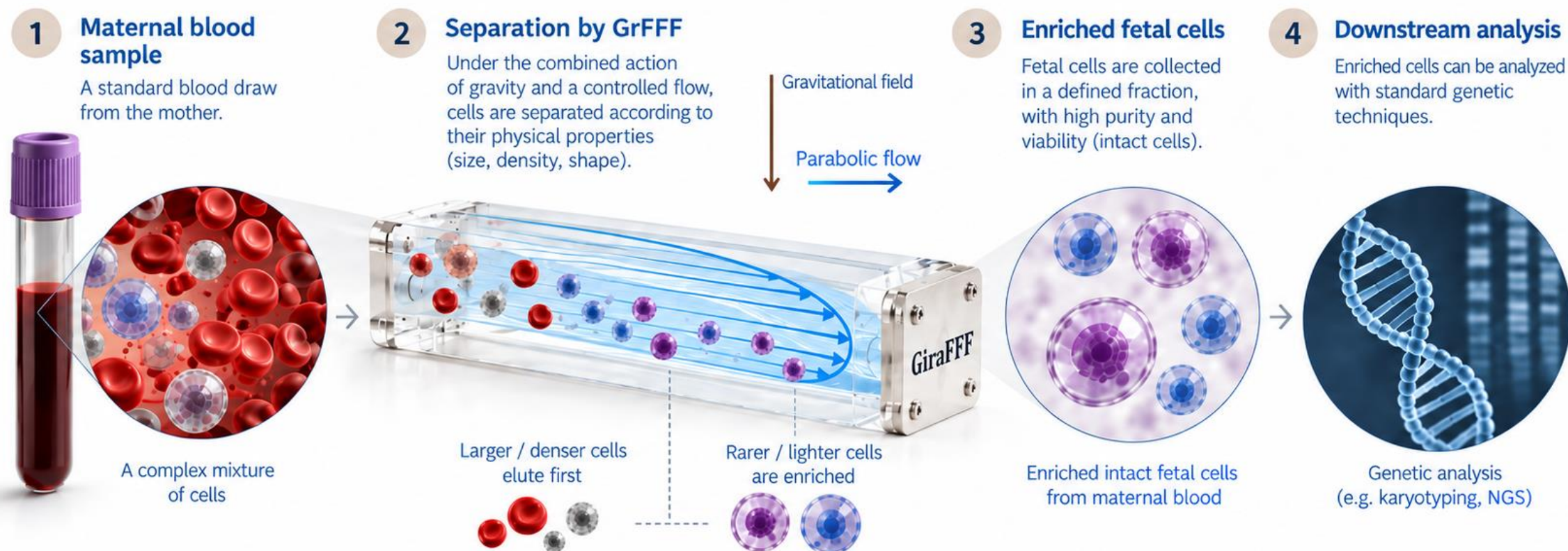
THE SOLUTION: GiraFFF TECHNOLOGY



GiraFFF enables the non-invasive enrichment of intact fetal cells from maternal blood, providing cellular material suitable for downstream **genetic analysis**.

HOW GiraFFF WORKS

GRAVITATIONAL FIELD-FLOW FRACTIONATION (GrFFF)



DIAGNOSTIC ROLE
Definitive diagnosis



SAFETY
No risk of miscarriage



FIRST APPLICATION

Prenatal diagnosis



FUTURE APPLICATIONS

Liquid biopsy
(e.g. circulating tumor cells)



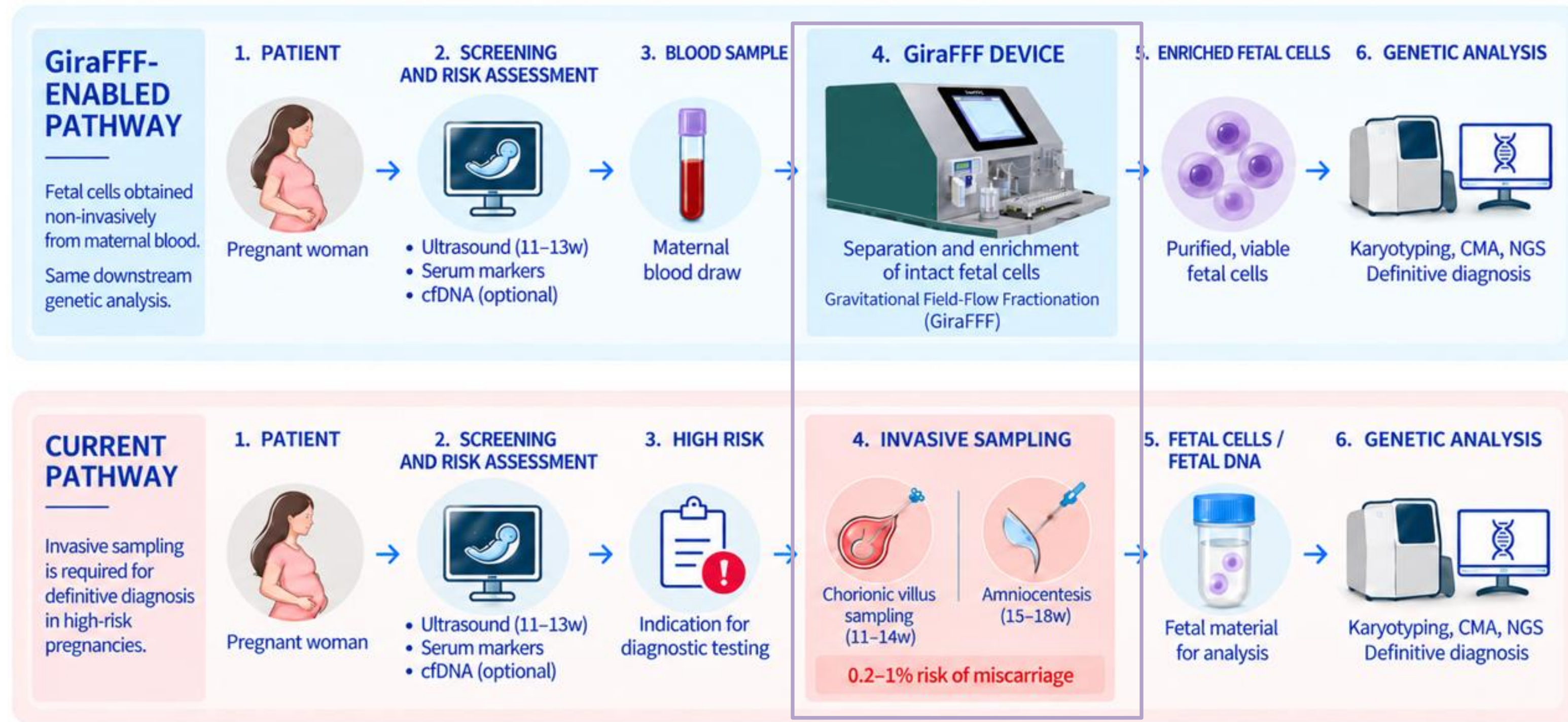
Fondazione IRCCS Ca' Granda
Ospedale Maggiore Policlinico

Sistema Socio Sanitario
Regione Lombardia

PerfeTTO
Italian Technology Transfer Office Network
in Life Science

Match-Up
Oct 1-2, 2026
Monte Rosa 91 - Milan, Italy

THE SOLUTION: GiraFFF TECHNOLOGY



Same diagnostic endpoint

GiraFFF PLATFORM: THE VALUE PROPOSITION

A new source of **intact fetal cells** – without invasive sampling



Intact fetal cells
from maternal blood



NON-INVASIVE

Simple maternal
blood draw



FLEXIBLE TIMING

Potentially broader
gestational window



DIAGNOSTIC POTENTIAL

Access to
intact fetal cells



**STANDARD GENETIC
TESTING**

Compatible with
downstream genetic analyses
—
Karyotyping · CMA · NGS ·
Targeted testing

COMPETITIVE LANDSCAPE

	GiraFFF	Amniocentesis / Villocentesis	Echography & serum marker	Free fetal DNA <small>Roche, Illumina, Aptima Technologies, natera</small>
Diagnosis	✓	✓	✗	✗
Fetal-safe	✓	✗	✓	✓
Suitable for all pregnant women	✓	✗	✓	✓
Low sampling & operator cost	✓	✗	✓	✓
Cost-comparable genetic analysis	✓	✓	✗	✓

WHO BENEFITS?

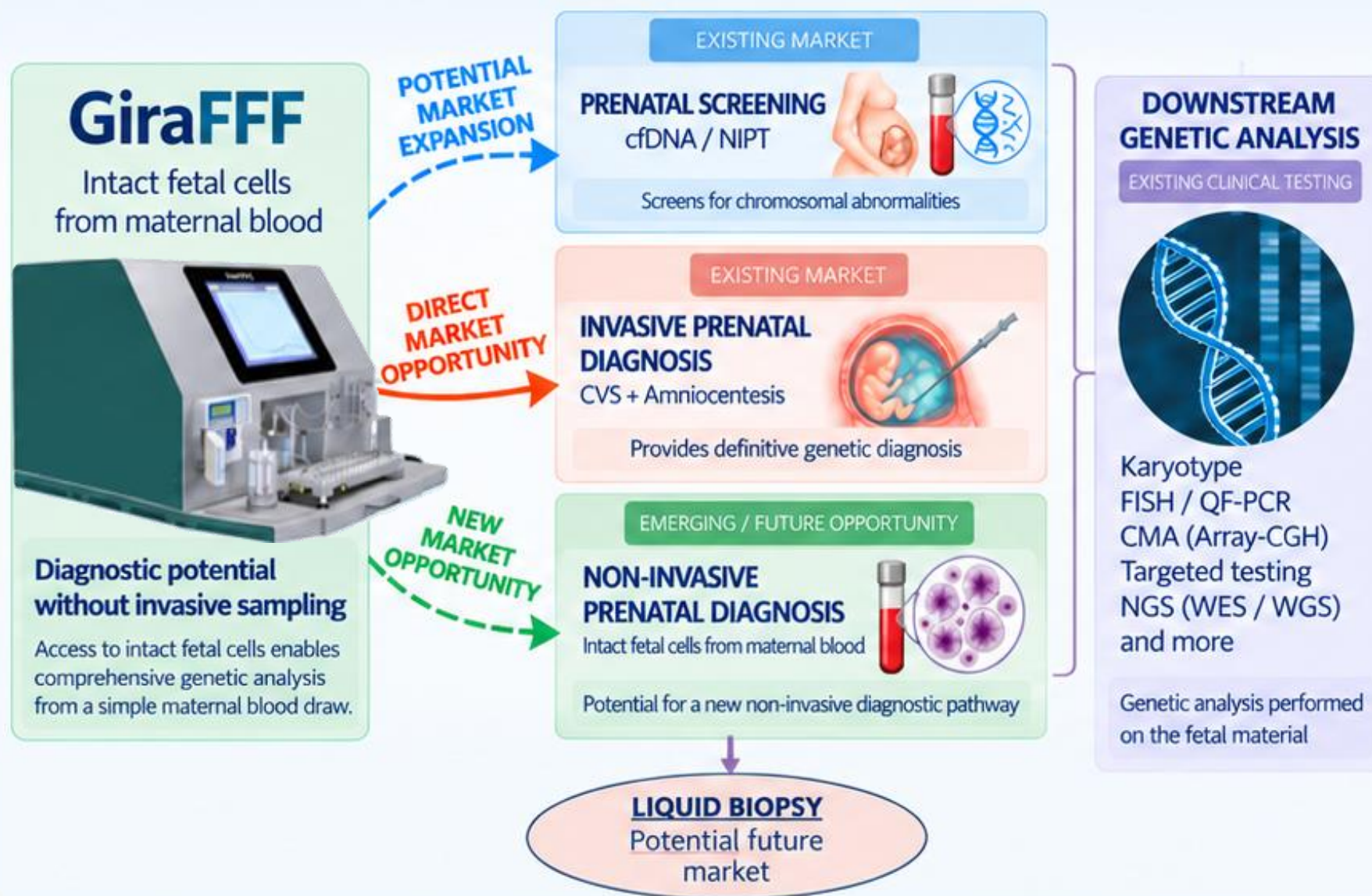
From patient to genetic analysis – a shared value across the care pathway



GiraFFF changes the sample — not the downstream genetic test.

THE MARKET OPPORTUNITY

GiraFFF can address multiple prenatal testing pathways



ITALY — WHY NOW?

AN EVOLVING PRENATAL TESTING LANDSCAPE



MATERNAL AGE IS INCREASING



32.6 years

Mean maternal age at childbirth · 2024

↑ from ~29.7 years in 1995

NIPT MARKET IS GROWING



\$84.7M

NIPT market · 2024

Projected
\$141.8M by 2029
CAGR 10.9%

INVASIVE TESTING IS DECLINING



1.8 / 100

amniocenteses per 100 births · 2024

vs. 2.0 / 100 in 2023



Later maternal age increases the relevance of prenatal risk assessment — while the market shifts toward **non-invasive approaches.**

A NEW OPPORTUNITY FOR

GiraFFF

Potential access to multiple prenatal testing pathways



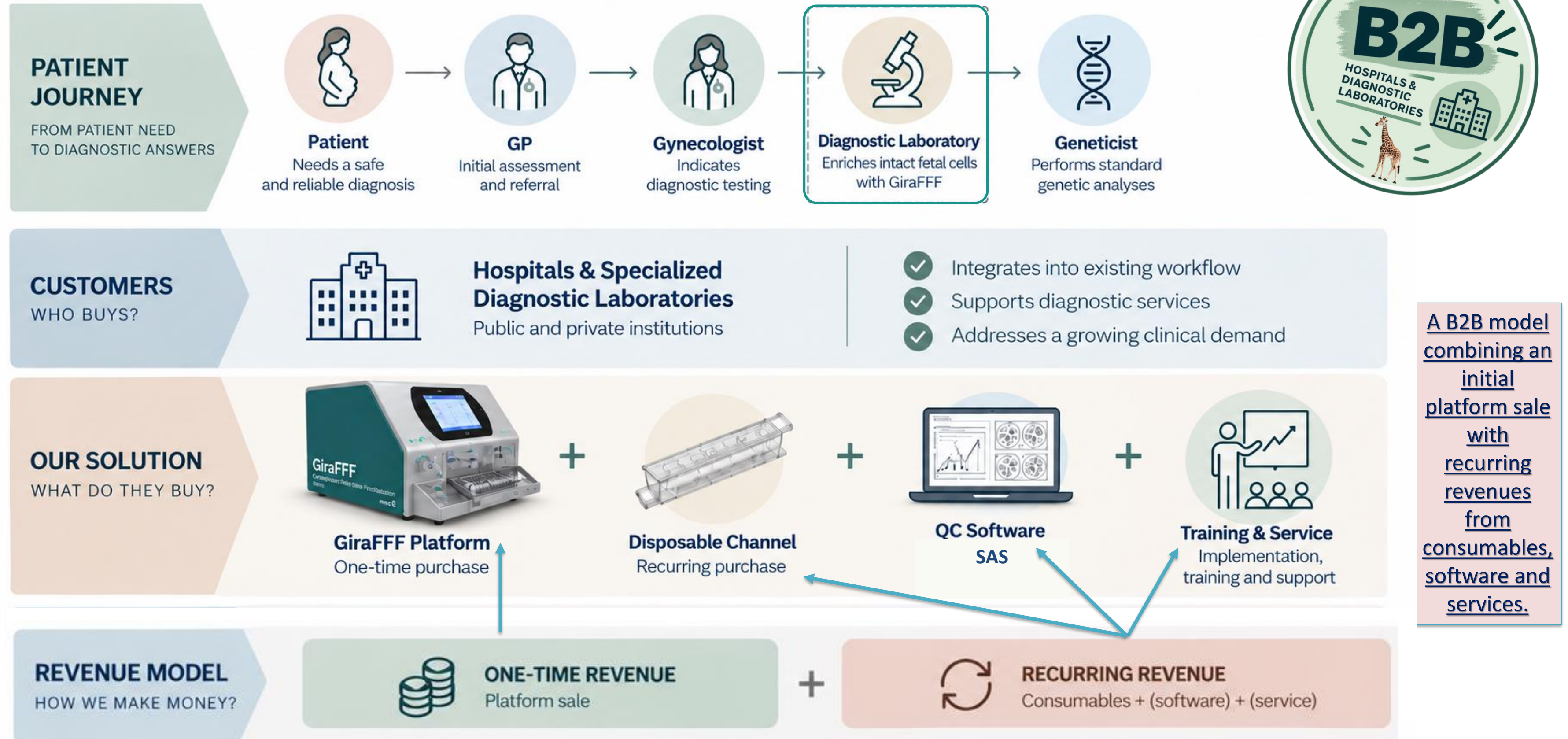
Sources: MarketsandMarkets (Italy NIPT market, 2024, 2029); ISTAT (Mean maternal age at childbirth, 2024; 1995); Ministry of Health / ISS, CeDAP 2024 (amniocenteses per 100 births, 2024, 2023).

PROTECTING LIFE, CARING FOR MOM AND BABY.

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Italian Technology Transfer Office Network
in Life Science

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GiraFFF: THE BUSINESS MODEL



IPR



NON INVASIVE METHOD FOR PRENATAL DIAGNOSIS

INVENTOR: Debora LATTUADA

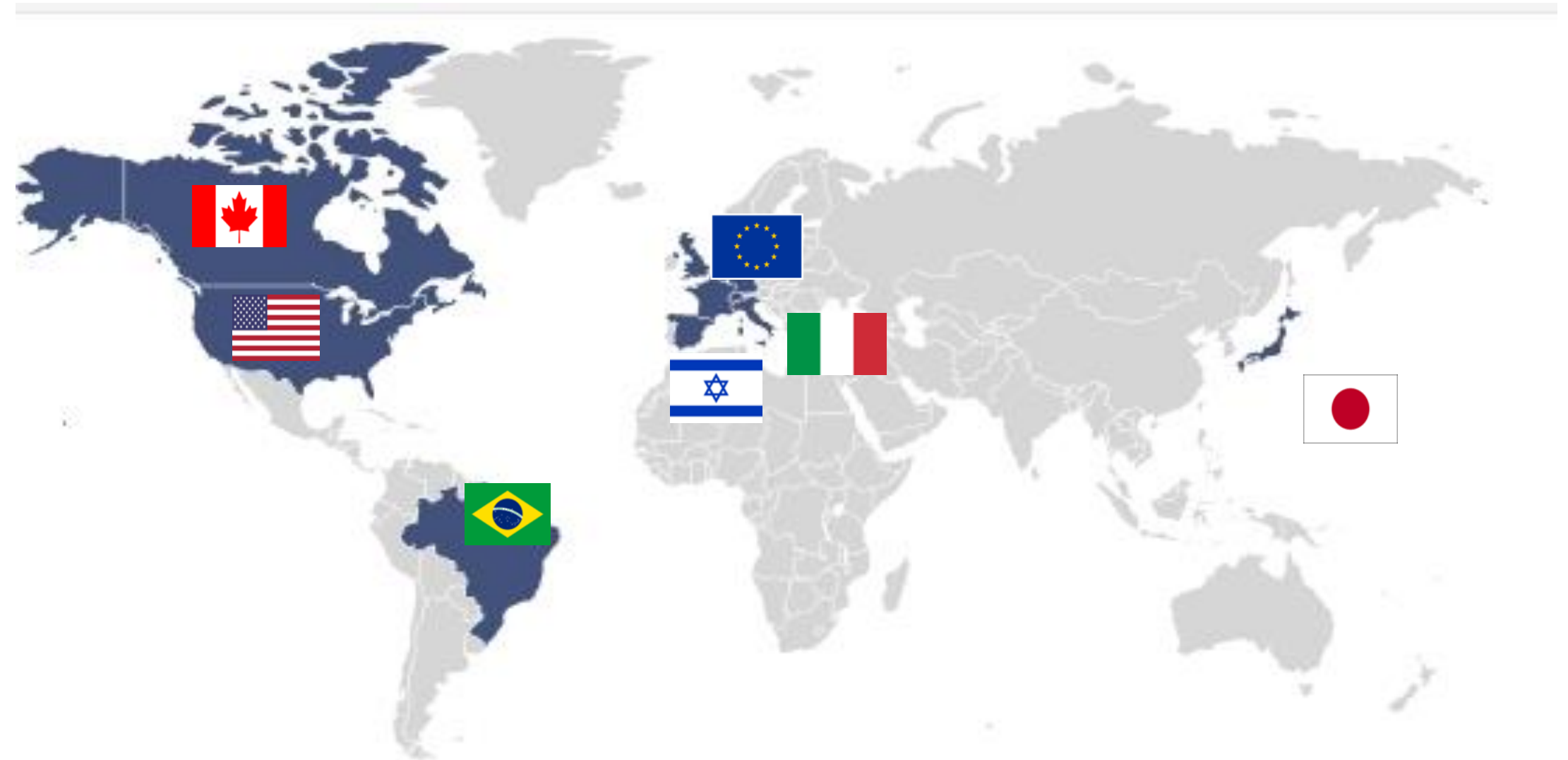
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**Worldwide Freedom
to Operate**



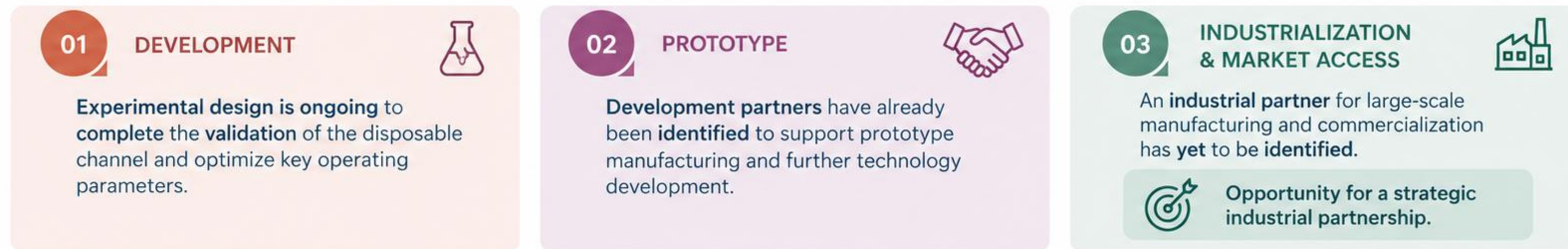
**A new patent application
will be filed in 2026!**



FROM TRL3 TO MARKET



PATH TO MARKET



GiraFFF: The Future Breakthrough In Non-invasive Prenatal Diagnosis

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TTO TEAM

A TECHNOLOGY BUILT THROUGH COLLABORATION
PEOPLE • EXPERTISE • IMPACT

FUNDING

Seed4Innovation
Scouting & acceleration program

UNIVERSITÀ DEGLI STUDI DI MILANO

Seed4Innovation • 2024
Funding supporting technology development

COLLABORATIONS

POLITECNICO MILANO 1863
Department of Chemistry, Materials and Chemical Engineering Giulio Natta (CMIC)

s&h
software & hardware
Technology development & prototyping

GiraFFF
Gravitational Field-Flow Fractionation
HEALTHY MOMS. SAFER BABIES.