MECHANICAL INEVITABILITY

CORRMETH™ System

Structural FIT Logic –

Solutions to Core Industry Challenges

Operational · Commercial · Scalable

Structural FIT Logic –

Structural Geometry → Mechanical Law → Apparel Engineering → Programmed to Scale

– A Universal Set of Principles Governing Predictable, Scalable Apparel

Across All Materials and Production Platforms

CORRMETH™

Secured · Enforceable · Globally Recognised

WO 2024/094577 A1 · Patented System · NATALIYA DOLENKO GENÈVE SA

July 2025

DOCUMENT PURPOSE

This document translates the legally protected CORRMETH™ System into an actionable, commercially focused framework for scalable industry deployment. It is designed to outline, in clear operational terms:

- How Structural FIT Logic addresses the core inefficiencies of conventional apparel systems
- How the patented method enables self-adjusting, tailored garments at scale
- How industry stakeholders can apply this system within existing production infrastructure

Building on the structural innovation formalised in
MECHANICAL INEVITABILITY: *MECHANICAL INEVITABILITY: Advanced FIT Architecture for Integrated Apparel Systems*
WO 2024/094577 A1: *WO 2024/094577 A1*

This document defines the practical, commercially deployable pathway from patented logic to scalable industry execution.

The subsequent chapters are intended for industry professionals, investors and operational decision-makers who are seeking a scalable, legally protected solution to the persistent structural challenges of the apparel industry.

Operational · Commercial · Scalable

From Structural Logic to Immediate Application: A System Ready for Industry-Wide Execution

CORRMETH™ System is not a conceptual framework – it is a **fully defined, protected**, and **implementation-ready system** that **resolves** the industry's most persistent inefficiency **delivering scalable, tailored FIT***.

The patented method establishes the first scalable Structural Logic infrastructure in apparel – enabling a fully manageable system** where all parties operate within a **verified framework of outcomes, transforming FIT into the operational foundation for trust, delivery, and execution.**

Built on proven Structural Logic, system delivers immediate operational feasibility at industrial scale. Every outcome outlined – reflects a practical deployment model – where design, production and sustainability gains are pre-engineered and replicable from day one.

Relying solely on today's manufacturing infrastructure***, **over 197 million garments annually****** can be produced with **built-in structural precision** – eliminating sizing uncertainty, enabling up to 78.6% decrease in unsold inventory, and replacing manual tailoring with **pre-programmed FIT intelligence.**

** **FIT** is defined as the **structural alignment** between the garment and the wearer's anatomy, accounting for the interaction of forces, shapes, and movement.*

*** **Structural Logic** refers to embedding FIT into the **physical behaviour** of the garment itself – not as a surface form, but as a built-in, responsive system aligned with anatomical function.*

**** **Technology:** The figure above refers specifically to 4-bed programmable production. However, the patented method is fully protected and compatible with both 2-bed and 4-bed high-tech programmable knitwear machinery, enabling scalable execution at an industrial level.*

***** While the method is technically universal in scope, current deployment is optimised for specific garment types. Broader categories and structural variations are the areas of future applicability.*

Structural FIT Logic:
The Foundation for Industry- Wide Correction

For decades, the apparel industry accepted **misfit (*misFIT*)** as inevitable. It adapted everything around it: returns, markdowns, excess inventory, AI sizing tools, but not the structure. Until now.

The patented correlation method, CORRMETH™, signifies a paradigm shift within the industry by fundamentally transforming the basis of operations. It introduces a superior structural framework that begins with the Structural FIT Logic (structural logic of garment engineering) that forms a **unified, precision-driven, programmable ecosystem.**

Incorporating Structural FIT Logic directly into the design process allows a broader range of customers to be perfectly fitted in fewer sizes. This approach has been shown to increase sales and reduce unsold inventory by eliminating the need for sizing tools or manual adjustments.

The result is a fully predictive system that delivers scalable, customised fitting, drives sales, streamlines operations and maximises efficiency across the value chain.

Key advances:

- **FIT becomes structural** → No customisation or post-production adjustments
- **Three sizes cover all eight** → Reduction of overproduction and streamlining inventory
- **Self-adjusting logic** → No reliance on AI prediction or manual fittings
- **Streamlined SKUs** → Efficiency engineered into the foundation.

Unlocking:

- **Structural Execution**: Transformation of trust, delivery, delivery and accountability throughout the apparel industry.
- **Operational Certainty**: **78.6%** reduction in unsold inventory.
- **Market Expansion**: Patented coverage spans over **80%** of global apparel demand.
- **Production Efficiency**: **3 sizes system replace 8 – delivering a 2.67× SKU** yield increase
- **IP Exclusivity**: **No legal or technical bypass** – replication would require the reinvention of manufacturing logic or overcoming the limitations set by physical laws.
- **Patented Structural Logic**: Fully compatible with all programmable knitwear systems
- **Unlimited Variations**: The system proves itself through anatomical diversity.
- **Invention Status**: The patented method establishes the world's first **Structural FIT Logic infrastructure** in apparel.

Structural FIT Failure Is the Root Cause of Systemic Inefficiency

Section overview

More than 99% of consumers do not fit exactly into the size range of any standard mass-produced garment because the traditional sizing system was never designed to reflect large-scale anatomical variations.

Traditional sizing translates human morphology into overly complex and inefficient steps that are guided by rigid pattern logic and compound assumptions. In practice, **each size label compresses up to 243 anatomically distinct anatomical types** into a single fixed template. As a result, **less than 1%** of consumers achieve true structural alignment, while the remaining 99% experience varying degrees of mis-fitting with a predefined, non-adaptive shape. This is not an anomaly, but a systemic flaw inherent in such rigid, pattern-based systems that transfer the rules of historical tailoring to modern mass production.

This section analyses the structural limitations of conventional sizing and breakes down its key failure points:

- **The Hidden Limits of Tailoring at Scale**
  Why tailoring principles break down when applied to mass-market production environments.
- **Sizing as a Structural Problem – Root of Apparel Inefficiency**
  How the simplification of size labels masks the true diversity of human anatomy.
- **Forming a Size in the Conventional Grading System**
  An inside look at how standard sizes are defined – and why they fail to deliver **FIT**.
- **The Business Impact of MisFIT – Unsold Inventory and System-Wide Waste**
  How misalignment between structure and anatomy leads to overproduction, poor sell-through, and increased returns.

Decades of inefficiency, mismanagement and waste of resources are not symptoms, but a direct result of this systemic flaw. The industry has not ignored these problems. It has invested, innovated and experimented – but the flaw remains structurally intact.

For a comprehensive review of this subject, please refer to the section on ***STATISTICAL INEVITABILITY***, which can be found on **page 32** onwards of this document.

Structural Consequences – Mapped

The following pages provide a structured visual outline of how the industry's core inefficiencies have compounded over time.

At the root of these challenges lies the reliance on static sizing and averaged pattern-making – a system carried forward from tailoring principles that were historically effective for individuals, but remain unresolved at mass scale.

These diagrams illustrate the structural sequence that links rigid sizing frameworks to operational, commercial, and material challenges – from FIT inconsistency to overproduction, unsold inventory, and waste.

Understanding this progression is essential to recognising why **lasting improvements depend** not on adapting to the symptoms – but **on correcting the root structural flaw itself**.

These pages provide a concise, visual overview. The full technical and commercial details are presented in the expanded sections that follow.

Industry Challenges – Structural Perspective

The following problems are widely recognised as being the core challenges currently facing the apparel industry.

1. FIT

Structural limitations remain unresolved. Woven garments rely on rigid sizing that cannot adapt to body variation, while knitwear provides comfort but lacks stability and precise shaping. Neither system delivers scalable, tailored FIT with real-time adaptability and structural integrity.

2. Overproduction

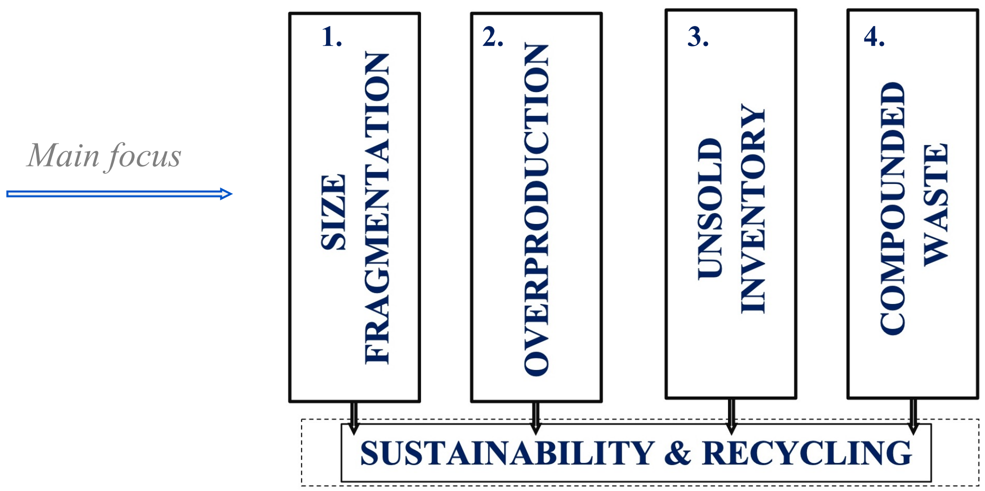
Production continues to exceed demand due to a reliance on historical data and broad assumptions rather than a real-time understanding of the situation. This leads to excess inventory, higher costs and material waste.

3. Unsold Inventory

Unsold inventory reflects systemic inefficiency. Poor FIT, inaccurate forecasting and fragmented supply chains lead to garments that cannot be sold at full price, or sometimes not at all, resulting in financial loss and an environmental impact.

4. Compounded Waste

Material waste accumulates at every stage, from cutting and assembly to sizing errors and unsold stock. Poor FIT drives returns, production inaccuracies generate offcuts and unsold garments often go to waste, thus increasing environmental impact.



Recognised problems: Fit (size mismatch), Overproduction, Unsold Inventory, Waste

Industry Solutions – Current Response Model

The following solutions to these problems have been proposed:

1. FIT: Size fragmentation

To improve the FIT and inclusivity of their products, many brands are expanding their size ranges to cover a wider range of body types. However, this approach leads to increased complexity. An increase in the number of sizes leads to an increase in the number of product items, which makes accurate forecasting difficult. As a result, certain sizes are produced in excess, while others are in short supply.

1. Overproduction

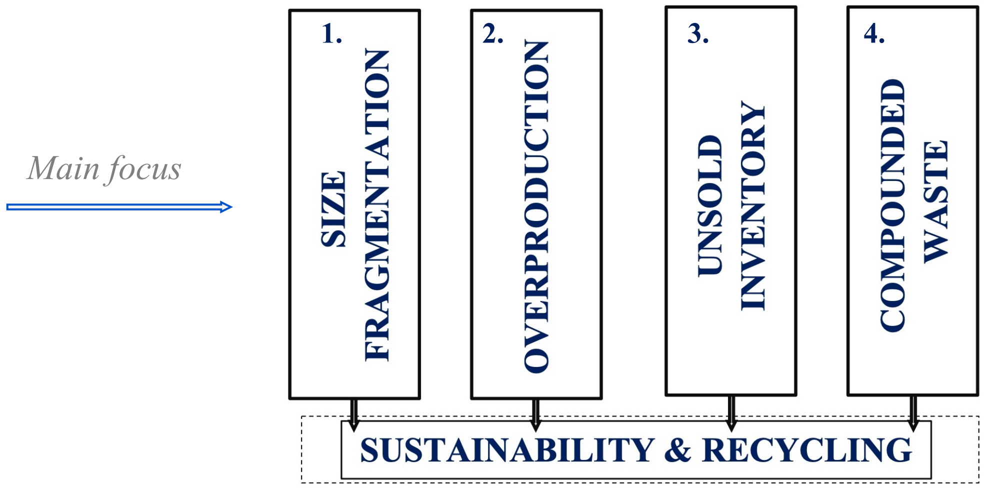
To reduce excess inventory, made-to-order and on-demand production models have been introduced. However, these approaches slow down production times, increase costs and are impractical for large-scale production. Forecasting still relies on outdated models rather than real-time customer data, leaving the problem of overproduction unresolved.

2. Unsold Inventory

Technologies such as AI-powered sizing tools and predictive analytics aim to find the right size for consumers, reducing returns and unsold inventory. However, these tools only work with static sizing systems, which improves the situation a little, but does not solve the underlying problem of poor FIT and overstock.

2. Compounded Waste

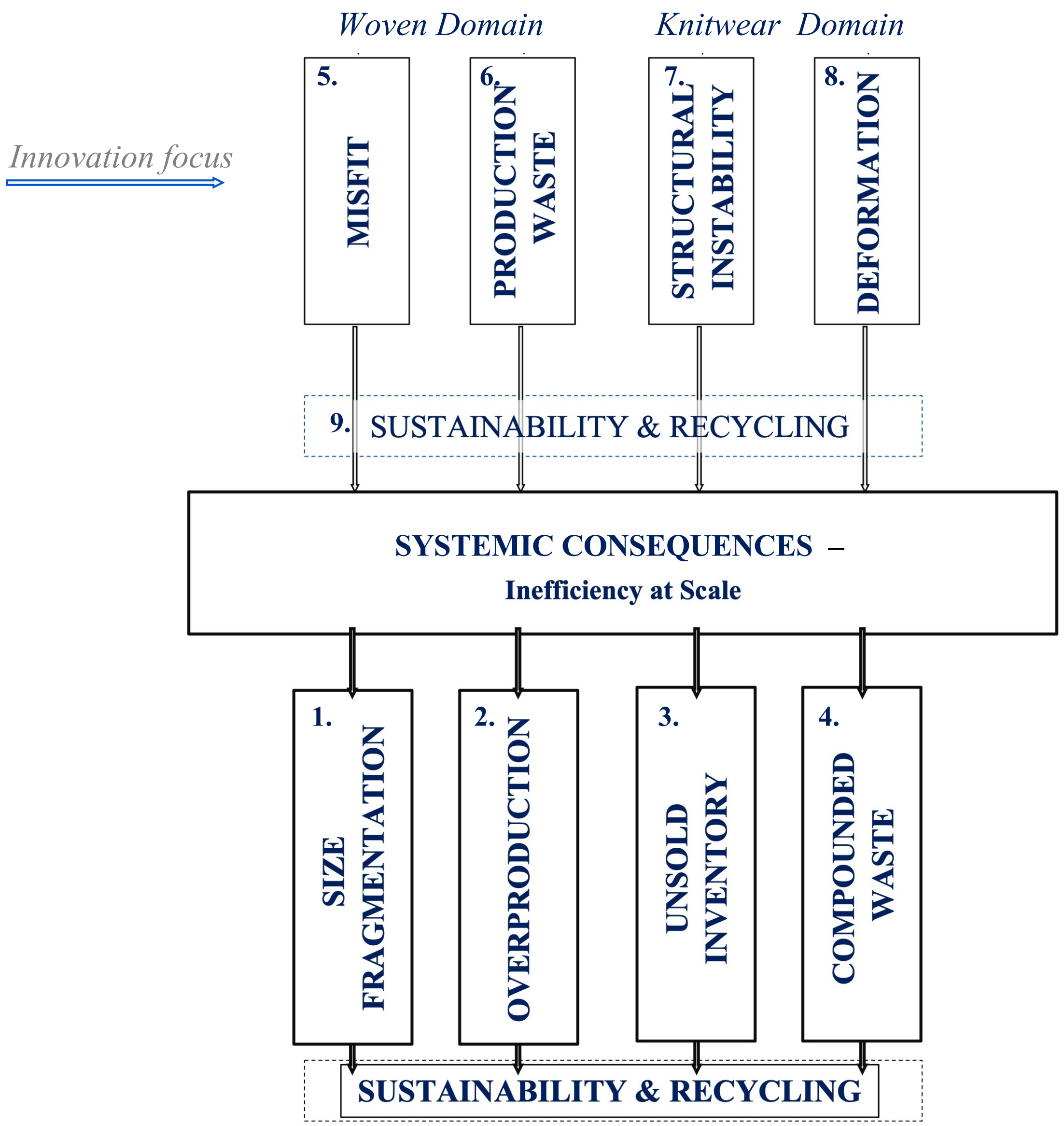
Sustainability initiatives focus on recycling, improved materials or offsets. But without addressing structural inefficiencies at the design and production level, these efforts are aimed at treating symptoms rather than causes. Waste continues to accumulate at every stage – from cutting to warehousing – meaning that achieving circularity goals is almost impossible.



Targeted Innovations – Industry Focus

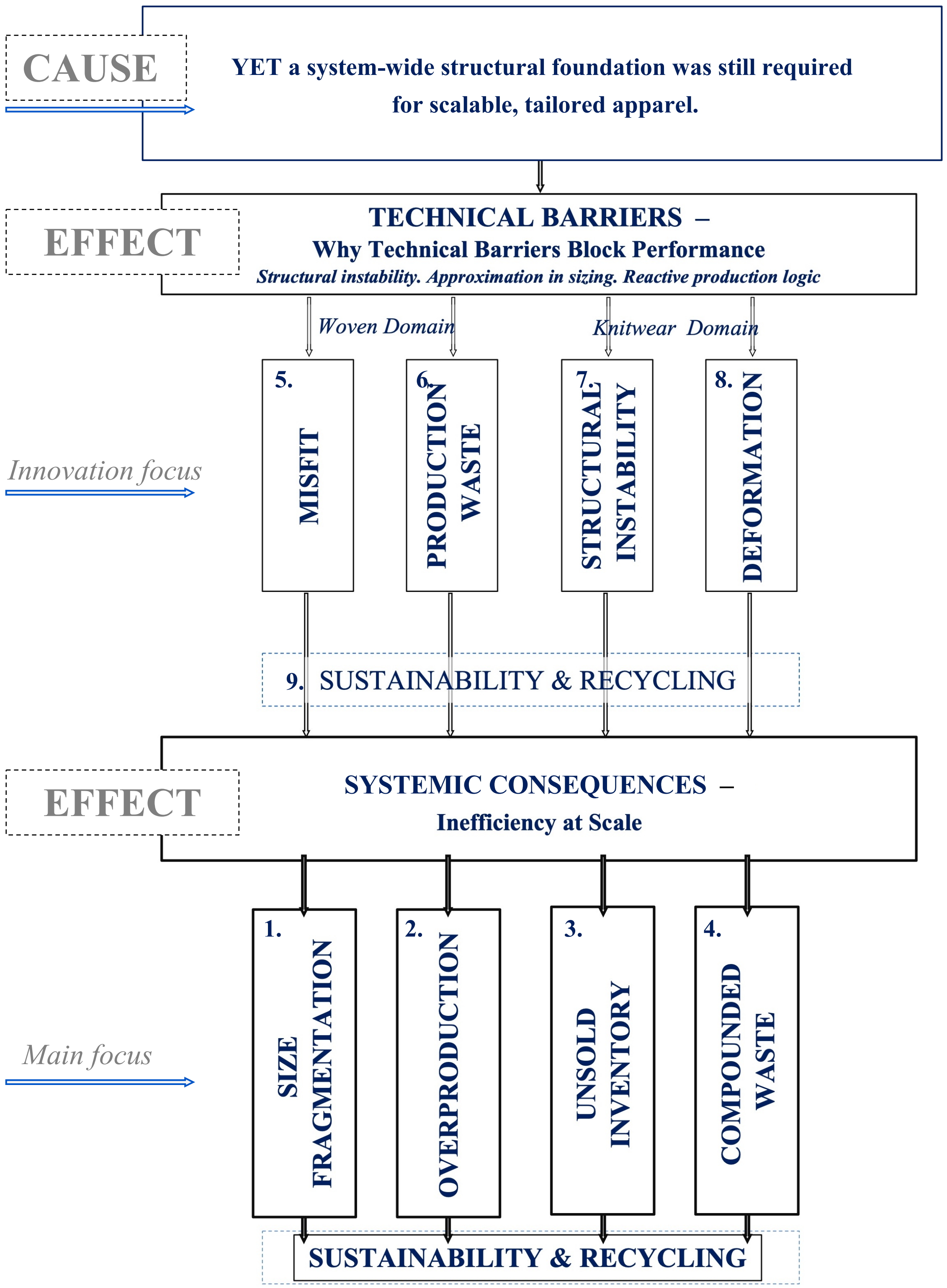
Recent innovations mark meaningful steps toward resolving structural challenges in apparel. These solutions contribute to progress across FIT, efficiency, material use, and garment performance.

5. **Dimensional mismatch**: AI-based sizing solutions are being applied to improve consumer sizing and reduce returns.
6. **Production waste**: Automated cutting technologies and material optimisation systems help to increase efficiency and reduce fabric waste.
7. **Structural instability**: Advanced fibre blends and patented textile structures are being developed to improve the stability and structure of garments.
8. **Deformation**: Shape retention fibres and engineered materials are increasingly being used to support the long-term shape retention and durability of garments.



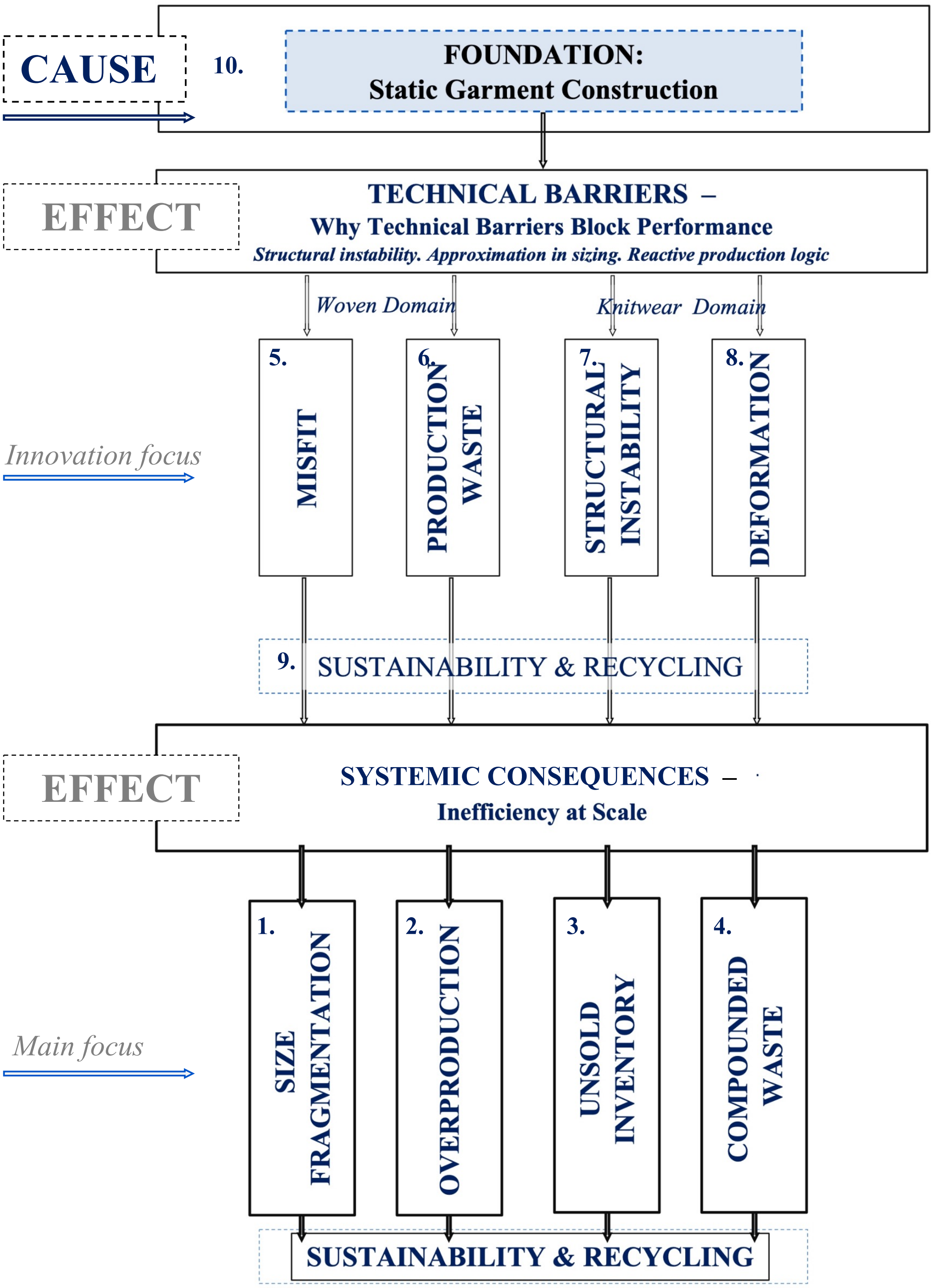
Innovation Progress – Industry Focus

The structural limitations in apparel begin with how sizing is defined: static pattern-making based on averaged data. This system compresses complex anatomical diversity into fixed templates, setting in motion the widespread inefficiencies seen across production, inventory, and material use.



Root Cause – Static Pattern-Making and Averaged Data

These advancements have improved the outer layer, but they have not addressed the underlying issues. True, scalable structural correction requires a system that is fundamentally different – one that is built on structural logic from the inside out.



“Thank you for your choice of SHIMA SEIKI technology for your new project.”

— Dr. Masahiro Shima
Founder of SHIMA SEIKI and
WHOLEGARMENT Technology

From Structural Diagnosis to Structural Correction

The preceding sections have outlined how systemic inefficiencies in apparel production are the direct result of structural limitations rooted in outdated sizing logic and rigid construction methods.

The following section introduces the **CORRMETH™ System**, **the first scalable framework to replace these limitations with Structural FIT Logic**, **delivering structural precision**, **adaptability** and **system-wide correction** from within the garment itself.

These pages provide a concise, visual overview. The full technical and commercial details are presented in the expanded sections that follow.

Unprecedented Mechanical Integration in Apparel: CORRMETH™ Structural FIT Logic

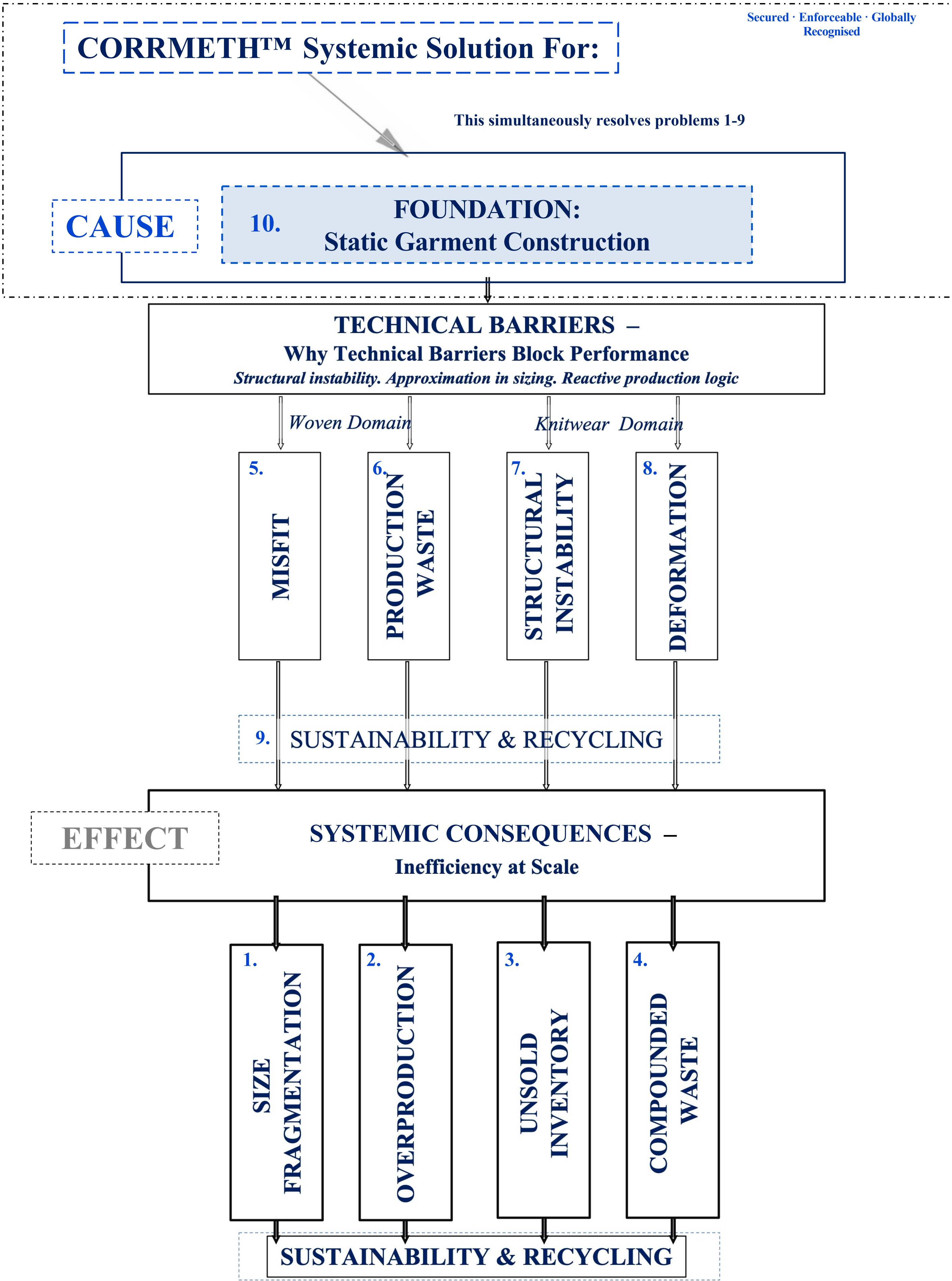
Inefficiencies in the apparel industry are caused by structural deficiencies such as poor FIT, oversized sizes and reactive production – all of which lead to waste and friction at every stage, from raw materials to logistics, inventory and resale.

The CORRMETH™ system creates a fundamental layer – structural intelligence – based on the **logic of panel interaction**. It triggers the material's behaviour through structural correlation, determining how the structure, FIT and movement of the garment is formed from within. This process is not externally driven, but is governed by physical laws expressed through the garment's structural geometry, which can be applied to any viable garment design. It is universally adaptable to any type of yarn or fabric combination and allows for an unlimited number of designs in the field of advanced programmable knitwear.

Unlike previous innovations that improved aesthetics or added point or surface support, this invention redefines the very structure of the garment: an integrated system of mechanical components that control the movement, adaptation, stabilisation and recovery of the garment.

All this is achieved without electronics, elastic materials or fasteners, but only through a sophisticated mechanical logic that ensures a visually accurate and structurally stable FIT in motion. The result is a closed, programmable mechanical system designed for unlimited scalability that adjusts and maintains the garment's shape during wear, bringing all other elements – fibres, texture and design – into line.

It thus sets a new mechanical standard by which the industry can be measured.


CORRMETH™ Systemic Solution For:
This simultaneously resolves problems 1-9
CAUSE
10.
FOUNDATION:
Static Garment Construction
TECHNICAL BARRIERS –
Why Technical Barriers Block Performance
Structural instability. Approximation in sizing. Reactive production logic
Woven Domain
Knitwear Domain
5. MISFIT
6. PRODUCTION WASTE
7. STRUCTURAL INSTABILITY
8. DEFORMATION
9. SUSTAINABILITY & RECYCLING
EFFECT
SYSTEMIC CONSEQUENCES –
Inefficiency at Scale
1. SIZE FRAGMENTATION
2. OVERPRODUCTION
3. UNSOLD INVENTORY
4. COMPOUNDED WASTE
SUSTAINABILITY & RECYCLING

Structural FIT Logic –
Predictive, Engineered Outcome

This invention does not approximate FIT - it dictates it.

The aesthetic result is structurally pre-calibrated, not subjectively assessed or visually corrected after production.

Thanks to the precise mechanical constructions – panel placement, reinforcement logic and controlled deformation – the method lays down the intended visual and structural result from the outset. Whether the goal is smooth minimalism or well-defined silhouettes, the result is not a reaction to the body, but a structural prediction designed to ensure precise appearance and behaviour in motion.

The full engineering basis, including angular logic and principles of structural interaction, is documented in the **TECH DEEP DIVE** section **MECHANICAL INEVITABILITY** (*page 60 onwards*).

In brief: form follows function – and function is based on mechanical laws:

Disciplines Integrated Within the Method:

→ **Structural Geometry (*Mathematics*)**
defines panel configuration and angular structure

→ **Mechanical Law (*Physics*)**
governs force distribution, deformation, and movement

→ **Advanced FITArchitecture – Invention(*Apparel Aesthetics + Engineering*)**
delivers built-in structural fit and calibrated appearance

→ **Programmed to Scale (*Computer Science*)**
executes logic via industrial knitwear technology at mass scale

A system where FIT is engineered, and performance is embedded structurally – before production even begins.

CORRMETH™ Structural Unification – Woven Precision Merges with Knitwear Adaptability

The CORRMETH™ system enables the production of an unlimited variety of perfectly fitting garments – WITHOUT:

- **Personalised fittings**
- **3D body scans**
- **Structural elements (like darts or belts)**
- **Fasteners**
- **Seams**
- **Post-production adjustments.**

All from a **single fibre**, with no compromise in structure, adaptability, or aesthetic control.

This method combines the **flexibility** of knitwear with the **structural integrity** of woven garments:

- **Woven-level tailoring structure –** without the rigidity of static tailoring
- **Knitwear-level adaptability –** without structural deformation
- **Mass-scale repeatability –** without the need for manual adjustment.

For the first time, two seemingly incomparable production categories can be assessed side by side:

- **Self-adjusting, perfectly tailored garments** engineered using the **patented method**
- **High-end tailored garments** created through traditional **cut-and-sew woven methods.**

This method achieves what was once considered unattainable:

✓ **mass-produced self-adjustable garments with the precision, structure, and longevity of bespoke tailoring – without compromise.**

By eliminating size fragmentation, maximising material use, and minimising waste at every stage, it transforms **FIT** into a **scalable engineering logic**.

This is not an alternative pathway, but a fully systematised operational model – one that **integrates design, manufacturing, resale, and recycling into a single, optimised loop.**

CORRMETH™ Structural Replacement – Resolving Size and FIT Limitations

This is not an improvement on traditional tailoring – it is a structural replacement that eliminates systemic inefficiencies at their source.

1. Core Mechanism: Structural Logic in Action

The patented method, through engineered inter-panel interactions, creates frameworks activated by a calibrated balance of structural principles:

- **Angular logic –** enabling controlled deformation
- **Reinforcement logic –** ensuring tailored structure based on the dominant angular configuration.

These frameworks set the garment's structure in motion, enabling simultaneous shaping and internal force distribution. The result is a self-adjusting, structurally tailored **FIT** embedded directly into every mass-produced garment.

2. The Universal Mechanical Framework

→ **Applicable to any garment type.**
→ **Adaptable to any panel configuration.**
→ **Capable of delivering precisely tailored outcome**, regardless of the chosen technology or production volume.

Example: Adaptive Size Coverage

A garment engineered for sizes 38–40 IT will also accommodate:
→ Size 36 IT (slightly looser FIT)
→ Size 42 IT (slightly closer FIT)

This is not stretch-based approximation – it is engineered precision in motion, driven by embedded **Structural FIT Logic**, without elastics, sensors, or manual tailoring.

3. Outcomes of Structural FIT Logic

- **Structural precision comes first – scalability follows.**
- **Programmable instructions execute consistently across any facility**, enabling instant, scalable production.
- **Each engineered size adapts across the full morphological range – plus adjacent sizes.**
- **No speculative grading based on assumptions.**
- **Three engineered sizes replace eight traditional SKUs.**
- **Inventory is streamlined, waste is reduced, and production is simplified.**
- **No added complexity – FIT** is achieved through engineered panel interaction even in **single-fibre** constructions.
- **Tailoring is embedded, not added – no seams, darts, or fasteners.**
- **Garments adapt in motion and retain structural integrity.**
- **Self-adjusting, precise, and repeatable – one unified, efficient system.**
- **Predefined processes align every stage,** from development to distribution, with actual demand.

CORRMETH™: Broader Process Transformation

The same **Structural Logic** that enables precise, self-adjusting FIT within each garment extends to transform the entire apparel production system. This method does not merely modify garment construction – it **replaces conventional grading, tailoring, and size prediction models entirely**, delivering:

- **Pre-programmed**, **scalable production** with no speculative size assumptions
- A **unified, efficient system** where design, development, and production are structurally aligned
- **Consistent structural integrity** and visual precision, even when a single garment self-adjusts across adjacent sizes within a defined tolerance range

This broader structural approach replaces the inefficiencies rooted in legacy grading systems and reactive workflows with a fully engineered, scalable model.

Broader Benefits of the Structural Approach:

1. **The End of Approximate FIT – Beginning of Structural Logic**
   *FIT must be built from the structure up, **engineered directly into the garment**, not estimated from the surface down.*

2. **Redefining FIT as Structural Logic**
   This represents a foundational shift from reactive tailoring to an embedded, mechanical system of precision and adaptability.

3. **Execution of Structural Logic in Production**
   The method is applied within programmable manufacturing technologies, enabling precise replication at any scale.

4. **Sequential Refinement – Scalable Design Through Pre-Programming**
   Pre-programmed constructions replace speculative grading, allowing scalable design adjustments without compromising structural integrity.

5. **From Method to Garment → From Garment to Reengineered Process**
   Garments are developed as programmable systems, reversing the conventional workflow – structure is defined before production begins.

6. **Systemic Process Transformation**
   This method redefines every phase of apparel production – from initial design to resale – as an aligned, efficient system governed by Structural FIT Logic.

7. **Structural Intelligence as the New Standard of Size Coverage**
   Engineered size zones replace outdated SKUs and rigid sizing models, streamlining production,

*"Martin and I are overwhelmed with your innovation –
your passion, your intellect – to develop such an amazing new technique.
There is hardly any innovation in the market, but you yourself proved
that when you focus on it deeply, your knowledge from the mathematic
understanding allows you to go into a complete new field
in fashion textiles, which is so strongly needed."*

— **Martin**, Fabric Trend Setter
behind the Leading Fashion Houses in some of their Most Iconic Creations

Structural Resolution of the Five Core Challenges

The persistent inefficiencies in apparel − from inconsistent FIT to excessive waste − are not isolated flaws, but direct consequences of inherited structural limitations. These limitations, rooted in rigid sizing, reactive design processes, and fragmented construction methods, have made true scalability, precision, and circularity unattainable.

CORRMETH™ system eliminates these challenges at source, replacing approximation and workaround strategies with **engineered Structural Logic** embedded directly into the garment.

The following sections outline how the method resolves five interdependent problems that have long defined industry inefficiency:

Perfect Dynamic FIT − replacing size approximation with programmable structural precision.

Material Efficiency − eliminating waste through structural pre-engineering.

Structural Stability in Knitwear − combining tailored precision with adaptable comfort.

Deformation Control and Longevity − preserving structure, FIT, and appearance over time.

Recycling and Circular Design − enabling fibre recovery through mono-material construction.

Each solution operates as part of an integrated system, structurally engineered to deliver consistent, scalable outcomes − from garment performance to end-of-life recyclability − without compromise.

No. 1 Perfect Dynamic FIT

Replacing Size Approximation with Programmable Structural Precision

The Problem: Sizing Systems Cannot Deliver True Perfect FIT

Conventional garments are built on **pattern grading principles**, rather than structural intelligence. Sizes are static. FIT is either oversimplified for mass markets or overly stylised for luxury brands, leading to:

- Poor adaptation to body shape or movement
- High return and unsold inventory rates
- Compromises are made between comfort, function, and silhouette.

Neither approach guarantees FIT that is **structurally certain**; it can only offer that it might offer the closest approximation paper.

CORRMETH™ Solution: Built-In Responsive FIT

The **stabilising, self-adjusting mechanism** eliminates the need for body measurements, fittings and size speculation are unnessesary – all of which are unfeasible on a mass scale. Garments adapt dynamically to movement, shape and posture, all the while maintaining the crisp lines of traditional tailoring.

⟶ This **enables the mass production of garments that are indistinguishable from bespoke items** in terms of both appearance and FIT.

⟶ Each programmable construction covers up to **four adjacent sizes**, reducing the need for eight traditional sizes to just **three size variations** and achieving **mass-scale precision with minimal configuration**.

⟶ Constructed from a **single fibre** and powered by **mechanical movement**, the method simplifies inventory while preserving design freedom.

Garments produced with this method appear to be made from **tailored from woven fabric**, but are actually fully knitted. This is made possible by high-tech production processes that combine structure, flexibility and recyclability.

Quantified Impact:

- **2.67× SKU reduction** through size range consolidation
- **3 sizes cover eight conventional sizes**
- **Perfect FIT maintained dynamically in motion**
- **Functional even with one yarn type** – recyclable, biodegradable, and **scalable to any extent.**

Comparative Insight: The Illusion of Tailoring at Scale

- **Mass market**: Under-FIT garments offer size inclusivity at the expense of shape and support.
- **Luxury apparel**: Sculpted silhouettes do not accommodate diverse anatomical variations.

→ Both niches rely on **static pattern principles, not built-in adaptability.**

→ Outcome: garments are **returned**, **unworn**, or remain **unsold.**

No. 2 Material Efficiency Through Structural Precision

Waste is Not a Symptom – it is a Structural Flaw. This Method Eliminates it at the Source.

The Problem: Apparel Manufacturing is Designated for Overproduction

Conventional garment development requires repeated sampling and manual fitting rounds, as well as production overages,in order to compensate for uncertainty in sizing. This results in:

- **20–30% material loss** during cutting
- **Repetitive prototyping** and sampling
- **Size-based overproduction** and inventory build-up
- **Unsold inventory** driven by poor size matching
- **Non-recoverable fabric waste due to blended materials**

Taken together, these inefficiencies increase material usage and energy consumption as well as costs, while undermining sustainability claims. Even precisely cut patterns for luxury garments generate large amounts of offcuts that cannot be returned to production.

The Solution: Predictable, Pre-Engineered Output

CORRMETH™ system eliminates waste at input and output stages by embedding structural intelligence directly into garment programming:

⟶ **FIT is guaranteed before production begins,** eliminating the need for trial-and-error.

⟶ **Modular panel logic enables controlled refinement** with a minimum number of prototyping iterations.

⟶ All garments are produced as **final units seamlessly**, with no offcuts.

⟶ **The size range is reduced by 2.67x**, which reduces inventory volume and eliminates so-called 'buffer' sizes.

⟶ Made from a **single yarn type**, with no fasteners or seams – allowing direct fibre recovery.

⟶ **Waste is no longer an uncontrollable variable; it is a controllable outcome.**

Quantified Impact:

- **Unsold inventory reduction**: −78.6%
- **Production waste reduction (incl. unsold)**: − 82.4%
- **Production waste near zero** (fully-fashioned seamless knitting, no cutting)
- **Waste reduction per garment sold**: − 84.9%
- **Waste reduction from size mismatch**: − 85.3%
- **Material offcut elimination**: ≈ 100% (fully-fashioned production, modular process, few iterations)
- **CO_2 emissions reduction (waste-linked)**: − 68.4%
- **Electricity use reduction**: − 66.7%.

→ One system → End-to-end development with minimal input and maximum precision.

Comparative Insight: Cut-and-Sew Waste Cascade

- **Cut-and-sew methods waste 20–30% of fabric** during production by default
- **Size fragmentation** leads to the overproduction of incorrectly forecasted inventory
- Combined, **material loss and unsold inventory often exceed 37% per SKU**
- **Mixed fibres, fasteners, and seams** prevent efficient recycling and recovery
- **Woven tailoring requires up to six times longer production time**, and has waste rates of over 30% in some workflows.

→ Most of this waste is **permanent** – unrecoverable, unrecyclable, and unprofitable.

No. 3 Structural Stability in Knitwear

Precision and Structure are No Longer Exclusive to Woven Apparel

3.A The Problem: Lack of Stability in Knitwear

Traditional knitwear is renowned for its comfort rather than its structure. Its stretch-based design causes:

- Inconsistent form retention
- Lack of a sharp silhouette and tailored FIT
- Lack of compatibility with formal or structured use cases
- Limited size adaptability without compromising the appearance

Consequently, knitwear is generally unsuitable for applications requiring visual or mechanical sharpness, particularly in the tailored category.

CORRMETH™ Solution: Built-In Reinforcement Through Structural Logic

CORRMETH™ system transforms knitwear making it structured and **intelligent** rather than soft and reactive.

Reinforcement is embedded directly into the garment's architecture using **mechanical panel logic**, rather than being added afterwards via seams or supports.

⟶ Each panel contributes to the garment's overall structure, allowing for stretch and deformation only where required.

⟶ Movement is incorporated through controlled deformation, but the collapse of the structure is prevented.

⟶ Precision and silhouette are preserved – even after multiple wearings.

⟶ The result is **garments with tailored visual integrity**, engineered for anatomical variations and motion.

This is a new category of garments: **structured knitwear that tailors and retains the original shape like wovens, while providing the comfort of high-tech knitwear** – all without the need for added elastic fibres, hardware or stiffeners.

Functional Advantages

- **No lining, interfacing, boning, or external stiffeners** required
- **Targeted reinforcement zones** preserve the structure throughout its wear
- **Panel logic adapts to posture and shape** while maintaining stability
- **Enables tailored function** without the limitations of cut-and-sew
- **Structure and comfort co-exist** without compromise.

Comparative Insight: Stability Gap Between Woven and Knit

- **Wovens achieve structure** through cutting, shaping, and stiffening – but lack adaptability
- **Knitwear is adaptable** – but commonly lacks form retention and deforms over time

→ The patented method bridges this gap by introducing **reinforced, self-adjusting constructions** into knitwear – **enabling scalable, perfect FIT.**

→ **It is the first solution to merge woven-like structure with knitwear adaptability – delivering formalwear-grade FIT through fully fashioned, self-adjusting reinforcement without compromising comfort or freedom of movement.**

3.B Structural Precision in Motion: Why Deviations Matter

Structural stability should be considered an ongoing performance requirement rather than a static condition. Garments are not evaluated solely on their initial silhouette; they must maintain their intended structure under real-world conditions, including movement, variation in body proportions and repeated use.

Conventional apparel systems – have **limited capability to address** the ongoing structural demands of FIT. Even **minor dimensional deviations**, in the range of **1.5 – 2 cm**, can have a **disproportionate impact** when they occur in critical shaping zones such as the bust, waist, shoulders, or upper torso. These areas serve as anchor points for maintaining FIT and distributing mechanical tension.

Despite falling within the same size category, **anatomical configurations vary significantly** across these zones.

Most systems do not account for this variation in a way that preserves both precision and wearability.

Consequences Beyond Appearance

The impact of these **minor deviations** – what can also be termed ***body-garment misalignments*** – extends beyond visual appearance. Their structural implications include:

- Disruption of the intended silhouette
- Misalignment between panels with distinct mechanical functions
- Uneven load distribution across the garment
- Localised distortion at necklines, armholes, hems, and seams

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The Key Role of CORRMETH™ System in Solving Structural Misalignment

By contrast, the patented method introduces a **new Structural Logic** that is designed to maintain FIT and form during movement, over time, and in varying conditions. Rather than adapting existing tailoring conventions, it replaces them with a scalable, mechanical interdependent solution.

The method:

- **Distributes dimensional tolerance** through zoned stretch and reinforcement
- **Preserves structural alignment** by using pre-engineered mechanical panel logic
- **Maintains the intended shape without the need for additional stiffeners, linings or external elements.**

This allows garments to **adjust themselves** within defined tolerances, **maintaining** their **shape** and **structure** while **adapting to the exact proportions of the human body during movement**. **Reinforcement zones maintain the garment's mechanical integrity**, and **dynamic zones allow controlled flexibility**. This ensures that variations in body parameters do not affect the garment's overall structure or lifespan.

The ability to manage even **micro-deviations** is fundamental to both **structural precision during the movement** and **garment longevity**. Once misalignment occurs, it accelerates material fatigue and visual deterioration, especially with repeated stress. This highlights the link between the structural limitations of traditional systems and the long-term instability they cause.

The following section examines that it is **embedded Structural Logic** rather than reactive adaptation **that prevents deformation, supports longevity of wear and enables circular value**.

No. 4 Deformation Control and Garment Longevity

Shape is preserved. Structure is preserved. They are not just created.

The Key Knitwear Problem: Most Garments Deform with Use

Conventional knitwear lacks long-term shape retention, leading to gradual deformation with wear.

Over time, this leads to:

- **Stretch fatigue** from repeated movement
- **Distortion** in high-friction zones (knees, elbows and hips)
- **Permanent warping** of the neckline, hems, and seams
- **Compromised appearance** of FIT, and function
- **Reduced lifespan**, even with high-quality materials.

Deformation is not just a visual problem – it **affects the performance, resale value and recyclability** of garments. For this reason, knitwear is commonly designed to be loose-fitting – concealing distortion rather than delivering true FIT.

The Solution: Engineered Resistance Through Dynamic FIT

CORRMETH™ system employs mechanical movement integrated within the Structural FIT Logic to distribute stress across the garment, thereby preventing structural fatigue.

Dynamic zones shift in response to motion without overstretching while reinforcements zones maintain visual and mechanical integrity. This ensures that garments do not stretch, sag or lose their shape, even when subjected to repeated stress and prolonged wear.

⟶ **The garment adjusts in real time**, absorbing movement without distortion.

⟶ **Reinforced architecture returns** the garment to its original form after wear.

⟶ **The structure is protected at macro** (overall silhouette) and **micro** (seamless transitions) **levels.**

Long-Term Benefits

- **Shape memory recovery** is engineered directly into the garment
- **Stress zones are engineered to allow controlled deformation without causing a permanent distortion**

- **FIT consistency and appearance are maintained over time** – even after years of use
- **Zonal fatigue is eliminated**, preserving both function and form
- **Garments retain their original silhouette over time**
- **Ideal for resale and circular models**, where longevity equals profitability.

Comparative Insight: Deformation in Conventional Apparel

- **Knitwear apparel provides stretch**, but does not fully recover after repeated use unless synthetic fibres are added
- **Woven tailoring holds its shape**, but cannot adapt – often resulting in seam failure, breakage or distortion under stress.

→ Neither category can retain its original form under **continuous dynamic stress.**
→ The patented method is the first to offer in **real time, deformation-resistant tailoring** – capable of preserving structure in motion over time.

No. 5 Recycling and Circular Design

Circularity Begins with Structure – Not with Afterthoughts

The Problem: Apparel Systems Are Not Designed for Efficient Recycling

Conventional garments are often designed for aesthetics or cost, rather than recyclability. As a result, they often contain:

- Mixed fibres and incompatible yarn blends
- Seams, padding, and linings that require manual disassembly
- Fasteners (zippers, buttons) that obstruct processing
- Coatings or finishes that interfere with breakdown
- Elastic fibres that fragment or distort fibre quality.

These barriers can make sorting, recovery and fibre reuse inefficient, costly or impossible, particularly for structured or tailored garments.

CORRMETH™ system Solution: Mono-Material Construction by Design

This patented method eliminates the complexity of recycling at a structural level. Garments are engineered from a **single fibre** with **no added fasteners, padding, or synthetic components** – making them inherently recyclable.

→ **The same structure that delivers FIT precision also ensures material purity.**

→ **No seams or trims to remove – garments are ready for direct fibre recovery.**

→ **Recycled fibre retains the quality required for reuse in premium garments.**

→ **Enables scalable, closed-loop recycling without the need for additional infrastructure.**

Quantified Impact

- **Fibre recovery rate**: Up to 85%
- **Recycling cost reduction**: −77.8%
- **Recycled fibre suitable for luxury reuse**
- **No disassembly required** — structure itself is the solution
- **No sorting required** – same yarn used throughout

- **Recycling efficiency gain**: +54.5%
- **CO_2 emissions reduction (circular model)**: −72.0%
- **Luxury fibre waste reduction**: −91.2%.

Comparative Insight: Structural Recycling Barriers

- **Traditional tailored garments** require separation of materials, removal of fasteners, and seam unpicking
- **Woven garments use mixed constructions** with linings, padding, fasteners and adhesives – none of which are recyclable together.

  → **Result**: lower recovery rates (≈55%), high processing costs (€6.71/kg), and limited reuse potential.

  → In contrast, the **patented method** enables up to **85% fibre recovery at a cost of €1.49/kg**, with the fibre fully reusable in high-end production processes.

By resolving these five interlinked problems through a single unified CORRMETH™ system, a new foundation is established – one that enables a fully optimised, scalable, and circular apparel industry.

The next sections explore how this foundation is applied in practice – across garments, operations, and production at scale.

STATISTICAL INEVITABILITY

Structural Diagnosis – Statistical Inevitability of Size and FIT Failure

Why CORRMETH™ is ***structurally necessary***, not an optional improvement.

The widespread misalignment between garments and the human body is not the result of poor design execution – it is a statistically inevitable outcome of a structural system never engineered for real anatomical diversity.

This section provides a formal, step-by-step diagnostic outlining how static sizing, compounded assumptions, and pattern-based grading systems mathematically guarantee structural **misFIT** – even before production begins.

These outcomes are not anomalies, they are the predictable, scaled failures of an outdated logic – failures that cannot be corrected without replacing the system itself.

Structural Barriers to Tailoring at Scale

Conventional apparel systems are based on static pattern grading principles. This approach assumes that consumer parameters within a defined size range (for example, sizes 36 to 50) can be evenly divided into fixed intervals. Each interval represents a proportional increase or decrease across most, if not all, such parameters. In practice, brands divide their consumer base into eight equally spaced size categories, assuming that the average measurements used to create each size align closely with the measurements of people in that size category. This is not structural intelligence – **it is a system of approximation**.

Even in the luxury sector, where garments are refined, the focus is often on style rather than individual responsiveness. In the mass market, FIT is deliberately loosened to expand the consumer base, with the aim of prioritising ease of production and return handling over tailored FIT. Result: a constant compromise between **comfort, function, and appearance, with rarely all three being achieved, contributing to SKU proliferation with no gain in accuracy.** This leads to major systemic breakdowns.

- **Inadequate adaptation to actual body shapes moreover in motion**
- **High rates of unsold, large volumes of inventory and returns due to misFIT**
- **No capacity to deliver a consistent satisfaction to individuals.**

Attempts to improve this situation rely on predictive adjustments, such as trial-and-error pattern variations and alterations, loose silhouettes designed to reduce risk. There are also AI-powered sizing tools based on historical data. After the sale, the system turns to reactive corrections such as alterations, exchanges and markdowns – all are all symptoms of a flawed structure.

True tailoring – meaning **precision of FIT based on individual body proportions** – remains the domain of individual craftsmanship. In the woven industry, this requires:

- **Accurate personal measurements**
- **Hours of manual construction**
- **Frequent readjustments with body changes.**

This process is fundamentally incompatible with large-scale production. Most woven garments can only be adjusted to a limited extent after production and **cannot accommodate real diversity in human morphology**. The uncomfortable truth is that: **FIT is still a guess** – imposed by system limitations that cannot be solved without redesigning the system itself. The apparel industry faces mounting challenges – demand volatility, size fragmentation, and unsustainable overproduction – the core issue remains unaddressed: **Apparel production operates without Structural Logic.** It does not engineer dynamic FIT – it only approximates it.

Sizing as a Structural Flaw – Source of Systemic Inefficiency

Unsold Garments Problem: Step-by-Step Guide

Preface:

Structural FIT Accuracy Within a Standard Size & Why Precision Breaks Down at Scale

Unlike historically tailored garments made-to-measure, the standard sizing system collapses under the demands of mass production to deliver the satisfactory level FIT. This section outlines the root cause of garment misFIT and the inefficiencies built into standard size labelling:

- **Fully aligned FIT Cases**: **1 out of 243 → ≈ 0.41%**
- **Structurally incompatible FIT Cases**: **242 out of 243 → ≈ 99.59%**

Only 0.41% of FIT Cases within each single size align with the original pattern configuration. The remaining **99.59%** result in structural misalignment – even before accounting for broader real-world morphological diversity.

The 243 Unique Structural Realities of FIT are outlined:

STEP 1: The dual meaning of *"Size X"* — technical vs. customer perspective

What is *"Size X"* for a pattern maker, and what is *"Size X"* for a customer?

→ **For a pattern maker:** A midpoint between two adjacent sizes – used as a technical reference for grading.

→ **For a customer:** it is an **averaged set of parameters** drawn from the data of an **already averaged population group**, **divided into fixed size intervals** – a layered approximation of real anatomical diversity.

STEP 2: What does *"Size X"* cover in practice?

→ **A tolerance range of ±2 cm across each key body parameters** (e.g., bust, waist, hips) within the size a pattern is made for – assuming that variation can be accommodated without distorting the FIT.

STEP 3: How *“Size X”* is technically assigned

⟶ Everyone between X–0.5 Size and X + 0.5 Size is considered to be *“Size X”* (for example

X=38 IT, everyone between 37 IT and 39 IT, even though these sizes do not formally exist).

STEP 4: What are the implications?

⟶ This size zone encompasses hundreds of real anatomical variations that, in practice,

do not actually fit due to the layered approximation of true anatomical diversity.

STEP 5: How many types of anatomical variations are technically classified as *“Size X”*?

⟶ If we consider just 5 key body parameters, and only 3 gradation steps within the ±2 cm tolerance (smaller / average / larger), we arrive at:

3^5 = 243 unique anatomical variations – all labeled as ***“Size X”***

3 × 3 × 3 × 3 × 3 = 243 distinct structural FIT Cases

⟶ All of these are grouped under the one size *“Size X”* label.

One FIXED pattern ⟶ One STANDARD FIT assumption.

STEP 6: What does this mean for the customer?

⟶ Only 1 out of 243 anatomical variations may match the pattern of *“Size X”*

exactly as intended.

→ The remaining 242 FIT Cases are forced into alignment based on compounded assumptions.

The Result ⟶ Compromise Is Built Into the System.

The following chapters detail the structural foundations that drive these misalignments.

Conventional Size Formation – Compounded Approximations in Practice

The global apparel industry operates on a standardised sizing system, using size labels such as 36 IT, 38 IT, 40 IT and so on, and treating these as fixed reference points for body proportions.

In reality, however, these structural variations result from a **compounded approximation**:

→ First, the population is grouped into size categories

Then, body parameters are averaged within each group.

The size of each category is based on average measurements assumed to be typical of a defined target population. These averages are then used to create size progression across fixed grading intervals.

The system ultimately presumes that all individuals within a labelled size have similar anatomical proportions, meaning a single pattern can be used for a wide range of body types.

However, this assumption is structurally incorrect.

Even within a single standardised size, there are significant differences between individuals in terms of **key physical parameters.**

These are defined in this document as the **Core Fit Parameters (CFP):**

CFP – Core Fit Parameters Womenswear ("*F*")

Symbol	Definition
CFP1	Bust circumference
CFP2	Waist circumference
CFP3	Hip circumference
CFP4	Torso length (*from waist to neckline*)
CFP5	Chest width (*across chest plate*)

These parameters form the structural foundation of FIT – essential for any garment where precision matters. They are not interchangeable, nor do they remain proportional across individuals. For example, two individuals with the same **CFP2** measurement (waist) could have significantly different **CFP1** (bust) and **CFP4** (torso length) measurements. This results in entirely different structural FIT requirements.

The current sizing system simplifies this complexity by applying a single, uniform silhouette and single pattern to structurally dissimilar bodies, and using a single size label.

A. Tolerance Range Within a Single Size

Standardised sizes are not fixed measurements. Rather, each represents a **tolerance band** – a range that accommodates deviation from a central base value.

For example, consider **Size 38 IT(*F*)**, where the industry often uses **CFP1 (bust) = 88 cm** as the central reference point.

Within this size label, the accepted tolerance typically spans **±2 cm**, meaning:

- Any bust measurement from **86 cm to 90 cm** falls into **Size 38 IT**
- The same range applies independently to **CFP2 – CFP5.**

While this may appear as a broad tolerance window, in reality it masks the discrepancy between real-world anatomical variation and fixed parameters embedded within a single pattern – all under one size label. An individual may align with the base size in one parameter (e.g., bust), yet deviate by 2 cm or more across two, three, or even four other parameters (e.g., hip or torso length), and still be classified within the same size.

This approach is not designed for anatomical precision; its purpose is to facilitate manufacturing efficiency. However, when multiple deviations occur across **CFP1 – CFP5**, the risk of structural misFIT increases dramatically.

B. Assumptions Behind Pattern-Making "Precision" Fail

Conventional pattern development attempts to improve FIT by using internal measurement increments **as small as 0.5 cm** during the creation of prototypes. While these refinements are considered precise – they are based on **fixed-size grading assumptions** that **do not reflect morphological diversity in reality.**

In practice, a woman selecting a size based on **CFP1** (bust) and **CFP2** (waist) measurements may have **CFP3** (hips) that differ by **5 to 7 cm – ten times more than the pattern structure anticipates**. This level of variation is not exceptional; it occurs in **over 99% of cases in the real world.**

The system assumes that accurate FIT can be achieved through formulaic adjustments within a rigid framework. However, when these foundational assumptions conflict with human **anatomical variations**, even the most carefully measured refinements become ineffective – and irrelevant to real-world outcomes.

C. Structural MisFIT Multiplies – 243 FIT Cases Within a Single Size

If one size in standardised conventional grading system allows a deviation of **±2 cm** across **five key body parameters**, it is assumed that this tolerance provides sufficient flexibility to ensure a precise FIT.

In practice, it introduces **structural unpredictability** and results in probability of **misFIT in 99.59% of FIT Cases**. Each parameter – bust, waist, hip, torso length, chest width – can fall into one of three possible positions: **the base value (0), +2 cm, or –2 cm**

This results in: **3^5 = 243 distinct FIT Cases** – all classified under the same size label.

Only one of these **243 distinct FIT Cases** matches the original pattern exactly – the one for which the size was actually designed. The remaining 242 distinct FIT Cases reflect varying structural deviations across one or more dimensions, **resulting in misFIT between garment and wearer**.

These **243 FIT cases** **do not represent** the number of body types – they represent the **minimum number of structurally distinct FIT outcomes** produced by the current tolerance model. In reality, women may differ by ±4, ±6 cm or more in each parameter, meaning the range of **real-world anatomical variations extends far beyond these predefined cases**. This unresolved variability drives system-wide consequences:

- **Increased returns due to inconsistent FIT**
- **Inventory imbalances across sizes**
- **Lower consumer satisfaction and retention**
- **Persistent overproduction of styles that** *"FIT no one perfectly*".

When misFIT is built into the structure, it cannot be resolved later through sales strategy, forecasting, or retail corrections. **It is a foundational flaw – repeated, scaled, and absorbed by the entire system**. These 243 configurations are **not edge cases** – they represent anatomical variations that are currently underrepresented or poorly served by apparel systems based on current pattern grading principles. While some combinations may achieve a good or acceptable FIT; others may result in visible discomfort, distortion, or complete misFIT. Yet they all are **classified under one size**. This explains why customers often say:

- "*Sometimes I'm a 38, sometimes a 40*"
- "*It fits in the waist but not the hip*"
- "*It looks right standing still, but feels wrong when moving*"

These are not anomalies; they are embedded failures inherent in a static system – one that assumes anatomical variations conform neatly to standard sizes or fall within a ±2 cm tolerance across each single parameter. In reality, 243 unique structural configurations are compressed into a single standardised label – a size never designed to reflect the broad spectrum of **anatomical configurations within.**

Systemic Business Losses Rooted in Structural FIT Failure

Structural Inefficiency Built into the System

Structural misFIT affects more than just comfort; it also drives measurable financial and operational inefficiencies on a large scale. When garments do not align as intended with over **99% of anatomical variations**, the **effects ripple across every stage** of the **apparel supply chain**:

- **Conversion loss**: Garments are tried on but not purchased due to inconsistent FIT
- **High return rates**: Sizing uncertainty leads to bracketing and dissatisfaction
- **Distorted size demand**: Retailers overproduce or understock sizes based on inaccurate feedback
- **Excess SKUs**: Brands expand size ranges in an attempt to compensate for unpredictable outcomes
- **Deadstock and markdowns**: Garments that do not fit are discounted, stored, or destroyed
- **Increased handling and logistics costs**: Each misFIT garment adds friction, cost and waste without adding value.

This is not a marketing or forecasting issue, it is an **inherent structural inefficiency of the system**.

Even advanced data tools and analytics cannot resolve the issue – because no algorithm can rectify a garment produced from a pattern that was never structurally functional for the majority of the population.

If the foundation is flawed, everything built on top of it is compromised.

Industry Responses to FIT – Symptom Treatment Without Structural Correction

How it is Addressed

- **Statistical optimisation without structural understanding**
  AI-based platforms use purchase and return data to recommend sizes, treating sizing as a statistical pattern (as described in previous chapters) rather than addressing the core structural problem of FIT.
- **Compound assumptions: from population to pattern**
  Classifying body types into 'standard' categories averages morphological configurations across selected population groups, but does not account for the fact that 99.51% of misFIT cases occur within each size. This is due to a misalignment between the five core FIT parameters and standardised parameters.
- **Zonal research, systemic problem unaddressed**
  Academic research mainly focuses on individual products and applications when exploring garment comfort and pressure mapping, rather than modelling system-wide morphological configurations.

Remains Unresolved: Systemic FIT Mismatch

Not been demonstrated

- **There is no demonstration** that only 1 out of 243 possible FIT Cases within the same size label matches the original pattern. There is no calculation published that **99.59%** of those cases result in some degree of structural misFIT.

  ⟶ The same standardised grading system continues to be applied without proving how often it fails.
- **Internal size variation is not modeled**
  There is no dimensional modeling that shows how much variation exists within a single size label.

  ⟶ The industry does not account for real differences in anatomical configurations among individuals considered to be the same size.
- **Key parameters are treated in isolation**
  There is no mapping of how bust, chest width, torso length, waist, and hip interact.

  ⟶ Garments are made as if each parameter can be fitted separately, even though misalignment between them is what causes poor FIT in practice, resulting in systematic inefficiency downstream.

SUMMARY

Root Cause Defined – Structural FIT Failure at Scale

The sizing problem in the apparel industry is not caused by unpredictable consumer demand, insufficient data, or limited size options. Rather, it stems from the fact that the system was never designed to accurately reflect anatomical variation on a large scale.

This overview demonstrates the core flaw through a step-by-step breakdown:

- **Step 1: The Illusion of Fixed Sizes**

Labeled sizes (e.g. 36 IT, 38 IT) are treated as fixed reference points, but in reality they are compound approximations based on average measurements from a limited sample population divided into equal intervals using fixed grading formulas. The assumption that individuals of the same size have similar proportions is structurally incorrect and creates a flawed basis for operational efficiency.

- **Step 2: Core FIT Parameters Reveal True Variability**

FIT depends on **multiple independent anatomical dimensions** − bust, waist, hip, torso length, and chest width, defined here as **CFP1–CFP5**. These parameters do not scale uniformly across individuals. Everyone has a unique anatomical profile, and any discrepancy of over 2 cm between body dimensions and the closest available size results in misFIT.

Patterns built based on averaged compound parameters cannot capture this complexity − and therefore fail to deliver consistent structural FIT at scale.

- **Step 3: Tolerance Windows Mask Inconsistency**

Each size label allows a tolerance of ±2 cm for every core parameter. While this **simplifies production**, it creates **243 internal FIT Cases** − all grouped under a single label as "*One Size*". I cases, all of which are grouped under the label "One Size". In reality, however, **only one** of these **243 configurations fully matches** the intended effect of the designed pattern.

Structural misFIT is not a margin of error − it's a built-in outcome.

- **Step 4: Why Pattern-Making "Precision" Fails**

Pattern development often introduces refinements of **0.5 cm** to seams or curves, on the assumption that these adjustments will improve FIT. In practice, however, human body deviations commonly

exceed these refinements by **five to ten times**. When applied within a framework that is both too broad and too rigid to reflect real anatomical variations, such refinements fail to correct for structural misFIT – rendering them **ineffective in over 99% of real-world cases**.

These compounded structural flaws result in the following outcomes:

- **Each standardised size generates 243 distinct FIT Cases**, conceals substantial internal variation within a single label.
- **Only 1 out of 243 Cases** aligns precisely with the original pattern for which the size was designed – representing a mere **0.41%** of potential matches.
- **The remaining 242 Cases (99.59%) fall outside** the intended structural configuration, leading to varying degrees of misalignment, even before accounting for a full spectrum of anatomical variations in the real world that falls outside the system's defined tolerance range.
- **Attempts to resolve this issue through expanded size ranges, sub-labels or AI-powered FIT recommendations ultimately fail. All such tools are based on the flawed premise that averaged anatomical parameters can produce consistent structural FIT across diverse human proportions – a notion that has been disproven by real-world outcomes.**

Two Foundational Issues in Current Sizing Systems:

1. **Anatomical parameters differ one from another independently**

   FIT depends on multiple core dimensions, five core ones are: bust, waist, hip, torso length, and chest width (CFP1 – CFP5). These parameters do not scale uniformly or proportionally across individuals. Everyone has a unique structural profile, and a mismatch in even one parameter outside the designated norms in even one parameter can cause misFIT – regardless of how well the others align.

2. **Grading assumes proportional scaling – which does not exist**

   Standard **apparel systems which are based on a pattern grading principles** apply fixed increments across all sizes, assuming proportional growth or reduction in each parameter. However, in reality, this uniform scaling fails to reflect the complex ways in which human proportions evolve across size ranges.

3. Additional Layer of Inaccuracy: Regional Morphological Differences

To further complicate in finding a solution for a perfect match in FIT, is further complicated by the fact that regional populations differ structurally. For example, a garment graded for a European fit may not align with the average proportions found in the US or Asia. Nevertheless, most sizing systems are applied globally without adapting to the morphological variations of each market.

Without a system that models how FIT behaves structurally, across parameters and individuals, the problem will recur at every scale.

Operational Consequences:

- Persistent unsold inventory
- High return rates and widespread size bracketing
- Distorted demand patterns and unreliable forecasting
- SKU proliferation without meaningful gains in accuracy
- Excessive markdowns, logistics friction, and system-wide waste.

Systemic Finding

FIT is not a secondary detail – it is the **primary condition for functionality, consumer satisfaction**, and **scalable performance**.

The existing framework cannot be repaired through incremental adjustments. Only by resetting its foundational principles and replacing size-based approximation with **embedded Structural Logic** can the root inefficiencies be resolved and true precision, efficiency and circularity be enabled across the apparel industry.

"Einstein of pattern making"

— **David Shah,** Founder and Editor-in-Chief of VIEW Textile Forecasting, the Leading Global Authority on Apparel Innovation Trends

CORRMETH™ System: Applied FIT Logic – Replacing Estimation with Engineered Precision

The widespread misalignment between garment structure and human anatomy is not a manufacturing flaw – it is the result of a system built on statistical assumptions rather than structural accuracy.

The CORRMETH™ system eliminates this reliance on approximation by embedding Structural FIT Logic directly into garment architecture. Through engineered panel interaction and controlled deformation, it replaces static sizing rules with a programmable, scalable framework that delivers mechanically governed, self-adjusting FIT – in real time, for every individual within the engineered size range.

This is not an enhancement to existing sizing logic – it is a redefinition of how FIT, structure, and adaptability are engineered, scaled, and replicated across modern apparel production.

The End of Approximate FIT – Structural FIT Logic Beginning

Fit Is No Longer Estimated, but Engineered

Structural Truth

Industry sizing systems are based on statistical assumptions, rather than anatomical accuracy*. Whether oversized for tolerance or sculpted for visual effect, most garments fail to provide structural FIT at scale. The result: high return rates, unsold inventory, and* ***misFIT in over 99% of cases****.*

Adding more sizes (e.g., 36, 37, 38, 39…) does not solve the problem. Each size still contains ***243 distinct FIT variations*** *across five core body parameters, multiplying the risk of misalignment. The more "precision" that is introduced through flat patterns that the more mismatches occur in practice.*

Every anatomical configuration is structurally unique. *No sizing chart can capture this reality without redefining FIT as a* ***built-in structural property*** *– shaped from the anatomical form up, not the charts down.*

CORRMETH™ system replaces static size rules with a new structural logic of FIT, which is achieved through engineered panel interaction. It introduces a programmable structural response that allows each garment to adapt dynamically and autonomously to individuals within a predefined range.

Example: A garment engineered for sizes 38 IT to 40 IT will also accommodate size 36 IT (with a slightly looser FIT) and 42 IT (with a slightly closer FIT), while maintaining its tailored structure.

Crucially, this adaptability extends to individuals who have been excluded by traditional sizing systems, resolving the mismatch between anatomical proportions and rigid pattern conventions. **The result is that over 99% of the population is covered by the range, enabling a precise, tailored experience without compromise.**

This is Not an incremental improvement:

It is a redefinition of FIT in scalable apparel:

→ precise

→ repeatable

→ embedded from the start

- **FIT** is no longer graded – it is **pre-programmed**.
- Structure is no longer assembled – it is **embedded at the programming stage**.
- Tailoring is no longer manual – it is **governed by mechanical logic, executed at scale**.

Statistically, it provides a structurally stable, fully tailored **FIT**.
In motion, it dynamically activates additional adaptability – in synchrony with individual's anatomical proportions.

Redefining FIT as Structural Logic

Why FIT Must Be Engineered – Not Estimated

Conventional static sizing systems simplify the estimation of human diversity by reducing it to pattern-based intervals. Within a single labelled size, **hundreds of structurally distinct anatomical variations** are grouped under a **uniform approximation**, meaning that misFIT becomes the systemic default rather than the exception.

CORRMETH™ system addresses this by redefining **FIT as a structural property**, rather than refining a system structurally incapable of delivering scalable precision by its very nature.

In the patented system, **FIT** is established as a **built-in outcome**:

- Engineered through internal garment architecture
- Governed by mechanical interdependencies
- Programmed to accommodate real anatomical diversity from the outset.

In essence: this represents a shift from estimated tolerance to embedded responsive precision, setting a new standard for scalable, structurally tailored FIT.

Outcome

FIT is now precise and repeatable from the outset. It is embedded rather than imposed by static 2D patterns. It is activated dynamically in motion and synchronised with human anatomy.

It is a scalable system that combines structural integrity with a refined aesthetic for the mass market.

CORRMETH™ System: Execution of Structural Logic

– How the Principle of FIT Becomes a Universal Mechanical Method

A. CORRMETH™ System: From Principle to Process Framework

The patented method transforms the Structural Logic of FIT into a repeatable mechanical system – realised through the controlled interaction of internal panels and calibrated deformation zones.

This mechanism constitutes the mechanical core of the invention, marking the shift from foundational principle to a scalable, replicable process.

Deformational movement has long been considered an unstable, high-risk area in garment engineering. Uncontrolled deformation can result in structural collapse, distortion, or long-term instability.

As a result, angular stretch zones have traditionally been avoided or strictly limited – a constraint that is even more pronounced in knitwear, where the effects are intensified in direct proportion to the fabric's elasticity.

This **patented method redefines** this previously avoided structural behaviour as a **patent-protected asset.**

To **enable mechanical self-adjustment**, each angular range must be **precisely controlled** – allowing the right proportion of deformation to occur, in the right direction, at the right location.

It systematically calibrates the full spectrum of **angular deformation properties in knit fabrics**, where stretch and shrink behaviour is particularly pronounced due to the material's inherent flexibility.

> *"Bias knit panels allow for full advantage of the superior elasticity properties of knit fabric to be exploited, creating softness, suppleness and elasticity and providing for flowing lines in a garment design to be realised." (WO2024094577A1)*

The patented method builds upon this potential to achieve **controlled deformation** across the **full 0° to 45° angular range** – the only segment within knit structures that can deliver true mechanical diversity for **self-adjustment**. All other angular configurations are rotational or mirrored derivatives of this functional core.

> This is how **self-adjustment in motion is structurally embedded** – not layered on, but **engineered from within**.

However, self-adjustment alone is not sufficient to achieve scalable, tailored garment construction. To ensure long-term structural stability and preserve tailored shaping – particularly across a wide range of individual anatomical profiles – targeted reinforcement is essential.

> *"Embodiments of the present invention therefore feature the inclusion of elongate reinforcement structures of knit fabric at places on the garment where extra support is required." (WO2024094577A1)*

Together, these two functions:

- **Controlled deformation**
- **Targeted reinforcement**

— form a **Universal Mechanical Framework:**

→ Embedded into any garment shape
→ Adaptable to any panel configuration
→ Capable of delivering any final garment outcome – precisely tailored to its structural blueprint.

B. Engineering the Self-Adjusting Tailored Garment for Mass Production

The patented method provides a replicable, legally protected framework for the industrial deployment of programmable, Responsive Tailoring, enabling precision to be scaled up for any production volume.

Before design and development even begin, the method defines all critical structural parameters:

- **FIT targets** – the degree of structural precision achieved through controlled deformation
- **Zoning logic** – functional roles assigned to each panel based on the garment's intended performance
- **Panel construction** – number, orientation, and configuration of panels required
- **Programming instructions** – internal architecture enabling real-time self-adjustment with tailoring.
- **Execution at scale** – production-ready code that ensures consistent results on any programmable platform.

This establishes a predetermined structural foundation: a self-adjusting tailoring logic that is embedded into the garment before any aesthetic or stylistic choices are made.

The method determines, in advance of any prototype development, the level of reinforcement necessary to ensure structural stability – calibrated to stabilise the degree of flexibility designed into the panel system.

The more dynamic the construction, the more targeted the reinforcement required to maintain a self-adjusting, structurally tailored outcome.

- **This stage directly determines both the market positioning and the cost-to-precision ratio of the final product.**

Once the balance between flexibility and reinforcement is optimised, the logic is translated into precise programming instructions.

- These instructions are **software-independent** and fully compatible with any **programmable knitwear system** – regardless of platform, machine type, or local infrastructure.

CORRMETH™ System Outcome: Structurally Precise, Globally Replicable

Each engineered garment makes full use of the capabilities of high-tech knitwear:

- **Structurally precise**
- **Mass-producible and replicable at any scale**
- **Consistently executed with zero deviation**
- **Globally deliverable** — without compromise in FIT, quality, or production integrity (digitally transferable and executable across any location or facility)

- This is where the **Structural Logic of FIT becomes garment reality: engineered precision, translated into code**. This finalises the structural foundation – converting logic into a physical, programmable form, ready for precise industrial replication.

The patented method is the only viable framework for producing scalable, structurally tailored, self-adjusting garments at mass scale. **No alternative pathway exists without infringing on the patented method.**

This protection extends to all structured garments that can be engineered – irrespective of their intended use or aesthetic expression – as long as they are based on the same fundamental structural principles – including the use of angular panel interactions to enable controlled deformation and FIT response.

CORRMETH™ System: Structural Geometry as a Governing Principle

The patented method redefines the application of structural geometry from a static approximation tool for pattern-making into a dynamic logic engine embedded within garment architecture. This governs:

- Real-time material adaptation
- Controlled panel movement
- Preservation of tailored precision – even across adjacent sizes

Unlike traditional pattern-making, which approximates body contours through fixed templates, this method encodes geometric relationships – including angular alignment and directional reinforcement – directly into the garment's internal structure.

Geometry is no longer a visual guide; it functions as a governing system for structural movement and controlled adaptation. The result is a responsive framework that adjusts to morphological variation and wearer movement – without relying on elastics, sensors, or manual tailoring.

The outcome: garments self-adjust structurally, preserving tailored precision and scalable FIT across the full anatomical range – including adjacent sizes – with consistent, repeatable mechanical performance.

From Method to Garment → From Garment to Reengineered Process: Systemic Process Transformation

With the **CORRMETH™ system** foundational logic having been been defined, the next step is to address **how the method reshapes the process itself** – replacing outdated sequencing and bringing **FIT engineering** to the forefront of development. The method introduces a streamlined, two-phase process that transforms structural FIT into a programmable, scalable foundation for garment development.

FIT Engineering – Where the Process Begins

This stage initiates the FIT engineering process – defining the garment's structural foundation before any visual or stylistic input. It establishes the mechanical logic that governs all subsequent phases, including design, development, cost modelling and production execution.

The core phases are:

Definition – Structural Logic Layer

- **FIT goals**: The degree of structural adaptability achieved through the correlation of controlled deformation and reinforcement – defining the intended application, market category, and broader potential across apparel segments.
- **Zoning logic**: Panel roles are defined by anatomical zones and calibrated to the intended structural outcome – whether tailoring precision, adaptive performance, or future category-specific use.

Execution – Garment Engineering Layer

- **Panel construction and reinforcement**: Number, orientation, and function of each panel – including targeted reinforcement – defined to enable controlled deformation, structural support, and precise movement calibration.
- **Programming translation**: A code-ready foundation that is compatible with any selected programmable platform.

These steps result in a **pre-programmed construction**: a garment logic that carries forward into design, development, and production.

Together, these two phases ensure that the Structural Logic of FIT is engineered with precision and can be deployed at scale. It is also aligned with the intended market performance and can be executed using the production technology defined in Phase 2.

Sequential Refinement: How Pre-programmed Constructions Translate into Scalable Design and Production

CORRMETH™ system introduces a modular, stepwise architecture that places **Structural Logic** at the centre of the development process – ensuring precision from the outset and consistency throughout.

By **correlating panel movement logic** with **zones of stability and adaptability**, the method provides a **fully validated mechanical foundation** on which all testing, development and production stages are based.

→ Immediate Structural Validation

Once the intended garment type and silhouette have been selected, the characteristics of the yarn and fabric are tested directly against the pre-programmed construction.

This **validation takes place before any visual development begins**, ensuring that the garment's structural performance – including **FIT responsiveness, controlled movement, and tailoring precision,** is embedded in the design from the outset.

Consequently, the **design process commences with engineering certainty** rather than structural uncertainty.

This provides immediate validation, confirming that **self-adjusting performance and mechanical precision** are guaranteed from the outset. With FIT guaranteed from the outset, the **process shifts from** reactive correction **to proactive refinement**:

- Instead of relying on FIT testing or post-sampling adjustments to address issues, **the creative development process can concentrate entirely on expression, styling and product positioning.**

→ Process Optimisation

As structural issues are dealt with upfront, the workflow becomes **digitally controlled, fault-tolerant, and scalable** – enabling consistent execution with minimal intervention. Every aesthetic decision is applied to a **verified mechanical foundation**.

Form follows structure – not the reverse.

This sequencing guarantees **consistency, functional performance, and production integrity at scale**.

Summary: From Structural Logic to Executable Garment

Phase 1 — Structural Logic

The process begins with the engineering of the internal architecture of FIT:

- Core objectives (FIT goals) are defined based on the intended function, market category, and adaptability needs.
- Zoning logic assigns roles to each panel – calibrated by anatomical zones and targeted structural outcomes.

Phase 2 — Garment Execution

This logic is then translated into an engineered garment blueprint:

- Panel construction and reinforcement are specified to achieve tailored precision and controlled adaptability.
- Code-ready programming instructions are prepared that are compatible with any programmable knitwear system.

Immediate Structural Validation

Before the design process begins, the yarn and fabric are tested against the pre-programmed logic:

- This step confirms that FIT responsiveness and silhouette behaviour are embedded – enabling the design process to proceed with structural certainty.

This restructured pathway transforms the design process into an execution layer, which is applied to a pre-programmed construction, built on verified internal logic. The result is garments that remain consistent in both form and function, at any volume and across any facility, with guaranteed FIT and consumer satisfaction from the outset. This fully optimises and streamlines each production stage ensuring a guaranteed outcome.

Key Outcomes:

- Verified self-adjusting **FIT** from the outset
- Defined structural intent guiding all design and development
- Finalised design based on a pre-engineered **FIT** logic
- Built-in quality assurance – eliminating downstream correction
- Predictable **FIT** performance across all production volumes
- Minimal prototyping enables creative focus, rather than structural **FIT** adjustments
- Digitally controlled, fault-tolerant manufacturing across global facilities
- Streamlined transition from structural **FIT** logic to finished garment
- Consistent execution with minimal intervention
- Predictable costs, reduced material waste, and shorter time to market.

Structural Intelligence as the New Standard of Size Coverage

Three sizes represent the optimal balance to cover for eight conventional sizes between engineering precision, customer satisfaction, and commercial efficiency.

Each **CORRMETH™** construction can be strategically developed between two standard sizes, based on the desired structural profile. **Three sizes** is the optimal standard – balancing engineering benefits, aesthetic control, and commercial efficiency across the widest spectrum.

Through built-in self-adjustment enabled by panel interaction, the resulting garment extends its size coverage by **±1.5 standard sizes**.

In practice, for example, a construction designed between **38 IT and 40 IT** can seamlessly accommodate:

- **36 IT** – with a looser, yet still structured FIT
- **38–40 IT** – with full tailored precision
- **42 IT** – with a closer, controlled FIT.

This three-size coverage is not the result of added stretch or arbitrary design elements. It is engineered for optimal precision and market coverage through controlled deformation, which is embedded in the garment's Structural Logic from the outset.

While **technically feasible**, reducing the number of sizes **below** three – to cover a range equivalent to eight traditional sizes – **shifts the structural balance**. Increased flexibility comes at the expense of tailored precision and overall structural integrity. Even with controlled deformation, extending conventional size coverage with fewer than three engineered sizes in FIT. At this threshold, the garment begins to rely more heavily on its self-adjusting function than on tailored shaping – and without sufficient targeted reinforcement to support this level of self-adjustment, structural performance may be reduced or the intended visual precision altered.

As outlined in Execution of Structural Logic (B):

"The method determines, in advance of any prototype development, the level of reinforcement necessary to ensure structural stability – calibrated to stabilise the degree of flexibility designed into the panel system. The more dynamic the construction, the more targeted the reinforcement required to maintain a self-adjusting, structurally tailored outcome."

This balance is at the core of scalable precision: maintaining tailoring standards while delivering adaptability across all morphological – all embedded in the pre-programmed foundation of the garment through the Structural Logic of FIT.

"It is amazing how the tailored integrity of the garments is maintained even in extreme conditions!"

— **Judith Halil**, British Couturier whose work has defined Landmark Moments in garment construction for Global Public Figures

CORRMETH™ System: Legal Protection − Structural Logic, Technical Scope & Enforceability

WO 2024/094577 A1 protects the only mechanically viable principle for scalable, self-adjusting, tailored garments − achieved through pre-programmed, mechanically **governed inter-panel logic and structural interdependence.** Although it is filed under **CPC D04B1** for programmable high- tech knitwear, protection is also granted for woven systems, hybrid platforms and any present or future technology that can achieve the same outcome through structural replication.

The **invention does not protect a specific garment appearance or aesthetics**; **it protects the structural cause of adaptive shaping itself**. By **embedding controlled deformation, targeted reinforcement and dynamic inter-panel interaction directly into the garment, the system eliminates the need for manual tailoring, elastics, sensors or fasteners**.

Enforceability applies under established **Equivalence Doctrines across Europe, the United States, China,** and other key markets − locking all viable mechanical pathways to scalable, adaptive FIT, regardless of material, machine, or method.

CORRMETH™ System:
Scope of Protection – Structural Logic Secured at Every Level

The patented method **WO 2024/094577 A1** secures the only known, mechanically viable, scalable system for delivering real-time, self-adjusting, tailored FIT at industrial scale. It protects both the method and the Structural Logic by which adaptive shaping is achieved through embedded mechanical precision – without reliance on elastics, sensors, fasteners, or post-production tailoring.

The protection covers all structural levels:

→ **Logic Level:** Any implementation that replaces post-production grading or patterning with pre-engineered mechanical behaviour embedded into the garment structure.

→ **Method Level:** Any process that integrates shaping, targeted reinforcement, and adaptability simultaneously within the creation of the garment, particularly via programmable means.

→ **Garment Level:** Any final product exhibiting real-time, self-adjusting FIT with a tailored shape – constructed without sensors, fasteners, or external manipulation.

→ **System Level:** Any scalable production method or industrial framework built upon the above logic and principles.

Legal protection of:

- Programmable high-tech knitwear platforms (2-bed, 4-bed, multilayer systems)
- Woven systems or hybrid platforms replicating the protected Structural Logic
- Future or theoretical 3D-printed or convergent technologies structurally combining with programmable knitwear
- All machinery, materials, or methods – present or future – that structurally achieve the same mechanical outcomes

Protection also extends to:

- **Woven Systems** – if they reproduce the protected **Structural FIT Logic**
- **3D Systems + High-Tech Knitwear Hybrid Systems**
- **Any machinery, method, or system** – present or future – that structurally achieves the **same mechanical outcomes** as those governed by the patented method

Whether via **programmable knitwear**, **bias-reinforced woven garments**, or **3D-printed hybrid structures** – any attempt to achieve scalable, dynamic FIT through internal structural behaviour is legally locked under **WO 2024/094577 A1**.

Legally Enforceable Across Key Markets:

- Europe – EPC Article 69 + Protocol (Functionally Equivalent Implementations)
- United States – Doctrine of Equivalents (Same Function, Same Way, Same Result)
- China – Principle of Equivalence (Same Technical Effect)

Key Principle:

This is not protection of visual design – it protects the *mechanical cause* of adaptive shaping: the engineered relationship between form, force distribution, and controlled deformation. Any system delivering scalable, real-time, self-adjusting FIT through structurally governed logic – regardless of material, domain, or production platform – falls within the protected scope.

Attempts to bypass the system, through technical variation, hybrid adaptation, or alternative platforms, still rely on the patented Structural Logic – making legal enforcement clear and globally applicable.

The full legal, technical, and structural protection outlined is detailed across Chapters 2, 19, 20, 21, 29, 30, 31, and 32.7 of the core document **MECHANICAL INEVITABILITY.**

CORRMETH™ System: Structural Independence, Global Protection, and Industry Validation

The recognition of **EP4365344 A1** (**WO 2024/094577 A1**) as one of only two structurally novel inventions within the WO2016018904A1 citation cluster – alongside NIKE Innovate C.V.'s footwear system – underscores the invention's structural originality and technical significance.

Beyond formal patent recognition, the system has been independently validated by the global figures responsible for shaping structural apparel, textile engineering, and scalable garment innovation for over three decades.

Together, these legal, technical, and industry validations confirm that the patented method represents not an incremental refinement, but a structurally independent, legally protected foundation for scalable, self-adjusting, precision-tailored apparel – setting a new global standard for **Advanced FIT Architecture**.

*For **licensing** inquiries, **implementation guidance**, or detailed **legal discussions** regarding **WO 2024/094577 A1**, please contact the company or the inventor directly.*
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