Timemachine Masterpiece

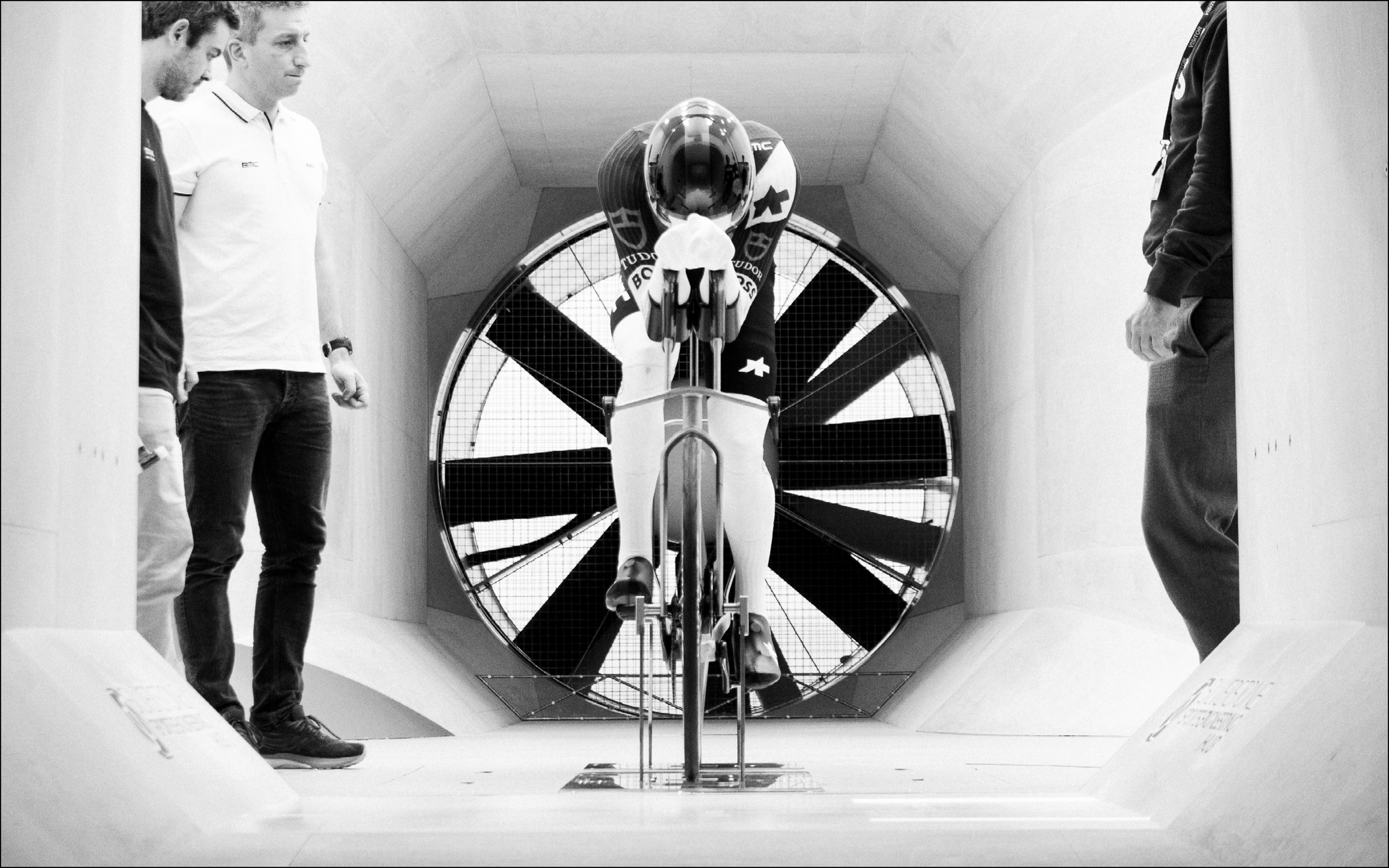
A step into the future.


TUDOR
OAKLEY
TUDOR
sportful
BMC
TUDOR
BMC
BMC

Motivation?
Winning!

Our Goal?
To create the fastest Time Trial bike for the needs of racers on the highest level.

Designed purely for racing at the most elite speeds, and freed from commercial constraints, we have built an all new time trial machine. One that will sit alongside the existing Trackmachine 01 and Speedmachine 01.


BMC
TUDOR
VISITOR

4 Minds Collaboration
Every good story begins with people. The dedication of BMC's managers and engineers, together with the Tudor Pro Cycling Team, is truly one of a kind. The four key stakeholders are John Glett, Fabian Cancellara, Stefan Christ, and Kurt Bergin-Taylor. Achieving something this exceptional can only come from deep, committed collaboration - this undertaking was no exception. Across the company, across teams and at every level, each individual contributed their best to the final product.

4TH Generation
BMC has consistently delivered cutting-edge innovations setting a new standard in time trial weaponry. Ever since its debut in 2006, the Timemachine has defined the standard for time trial perfor-mance.

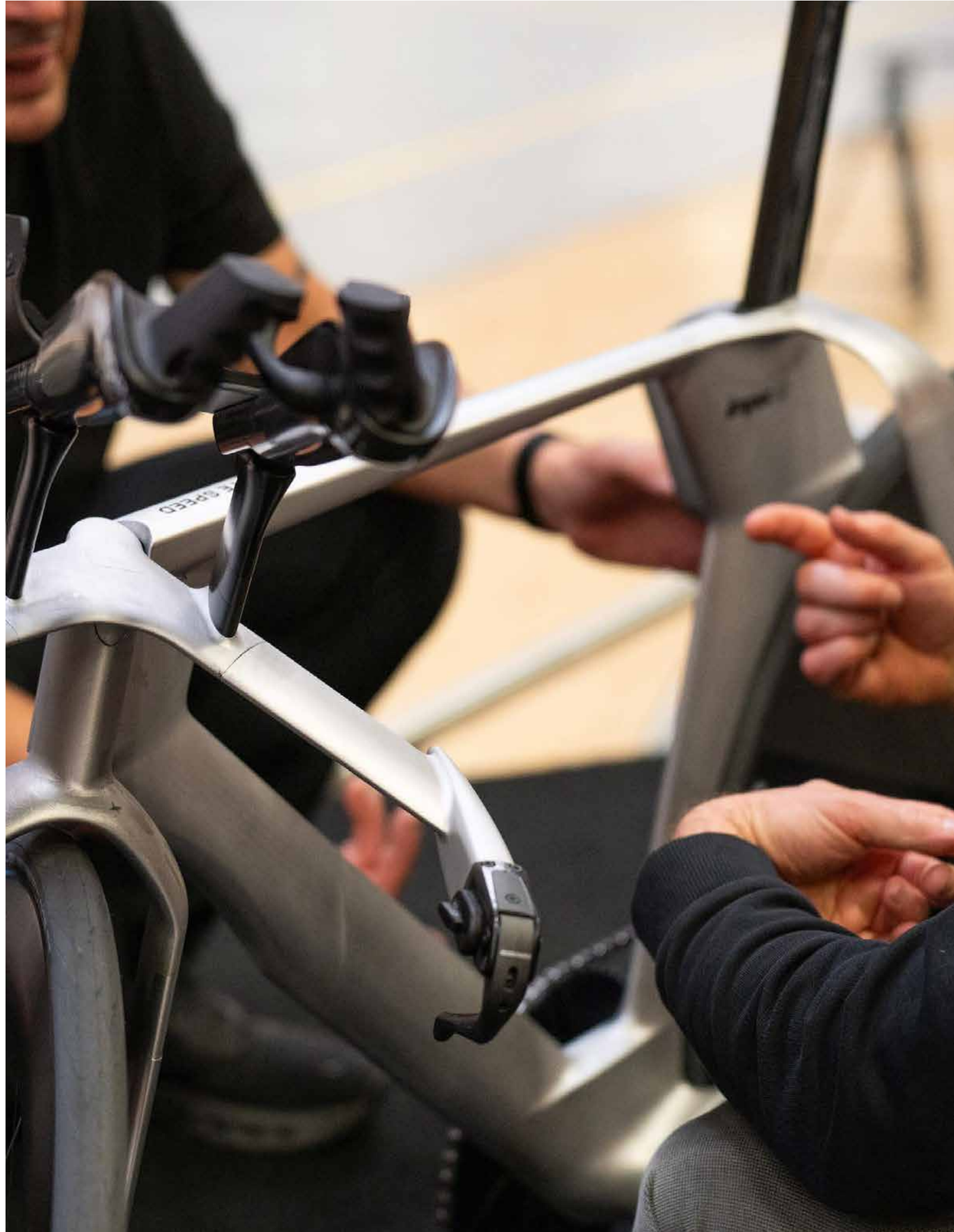
4%More Speed
Tudor Pro Cycling Team is never afraid to ask for more— they know that's what winning demands. With Impec Lab engineers, the Team set its sights on achieving a bold 3% improvement in aero performance. A target of 3% for the whole system by only focusing on the frame...

Our achievement? Rider and your bike are 3.7% faster— without compromising your position or your components of choice.

“Creating Speed is our very DNA BMC lives and breathes performance, with our legacy in the TT discipline the opportunity to push the boundaries again is a logical step.”
John Glett, BMC Switzerland CEO.

“We’ve always tried to revolutionize our legacy with each new generation of platform. The Timemachine Mpc. project allows me and my team to really push our boundaries, and to see clear progress measurable by a stop watch. We’ve literally been tasked with stealing time from the finishing clock, and that’s quite exhilarating.”
Stefan Christ, BMC Switzerland Head of R&D

“The final product is a testament to the deep trust and respect shared between BMC and Tudor Pro Cycling. Our Innovation team was able to complement the extensive expertise of BMC by bringing specific knowledge in aerodynamics, computational fluid dynamics, parametric design, testing methodologies, and real-world validation.
We believe this collaborative way of working is essential for maximising performance.”
Kurt Bergin-Taylor, Tudor Pro Cycling Head of Innovation



BMC has consistently delivered cutting-edge innovations setting new standards in Time Trial weaponry.

Timemachine TT01
Gen 1 - 2006

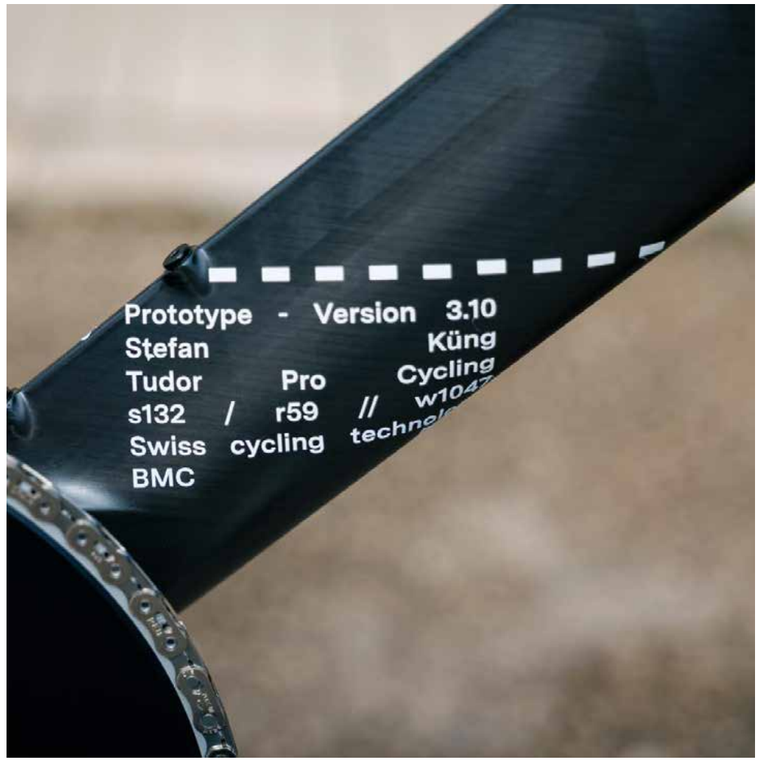
Timemachine TM01
Gen 2 - 2012

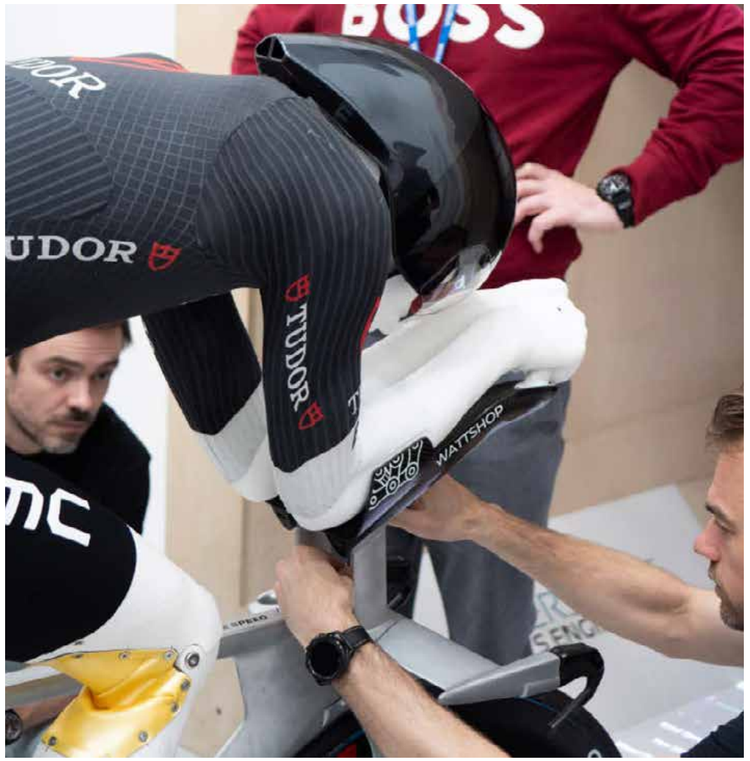
Timemachine TM01
Gen 3 - 2017

This is not a Normal Human Bike.

It is designed solely for Elite of the World Tour.

AeroSynthesis





What is AeroSynthesis?
A System Philosophy

A design philosophy and technology approach focused on harmonizing aerodynamic performance and system integration in bicycle development.
Designing seamless integration (rider + components + frameset), together with advanced computational fluid dynamics (CFD), wind tunnel testing, and real-world testing.
A complete equation to reduce drag, improve airflow efficiency, and enhance overall speed.

Impec Lab x Tudor Pro Cycling is the partnership turning the AeroSynthesis concept into reality.
With clear, ambitious, and achievable targets and an unmatched drive to create speed, this collaboration is dedicated to making professional athletes faster.

3.7% FASTER SYSTEM
System = [Rider + Components + Frameset]

Current Timemachine 01

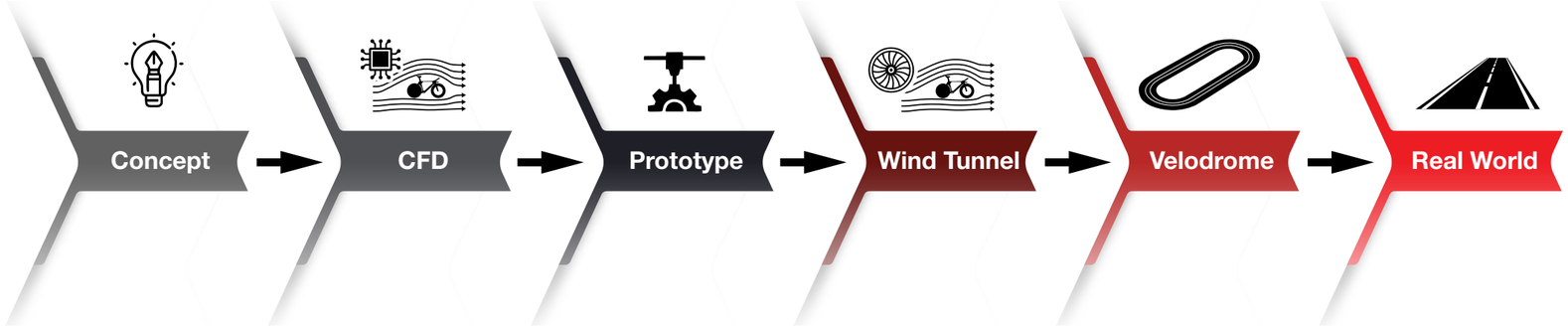
New Timemachine Mpc.

AeroSynthesis
Process and Parameters

From the initial concept to the final result, we navigated multiple key steps. To validate every idea and design option, we relied on accurate, carefully monitored processes. Nothing is overlooked, every step matters.

Computer simulations and wind tunnel testing can represent yaw angles precisely, reflecting real world conditions. We measured at each yaw angle at a riding speed of 55 km/h instead of 45 km/h... 22% faster than previous test parameter.

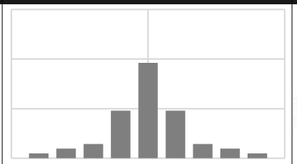
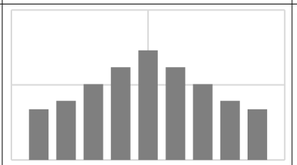
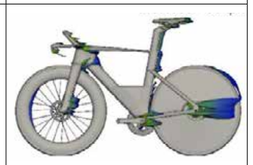
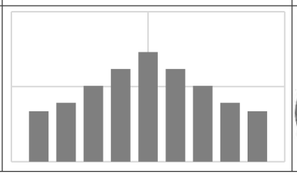
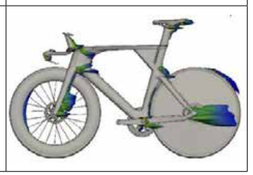
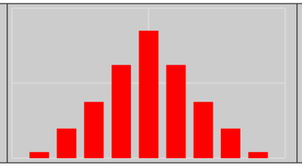
At higher speeds, a small yaw angle ensures realistic aerodynamic data, as forward velocity dominates crosswinds. Large yaw angles can exaggerate forces, leading to misleading results.



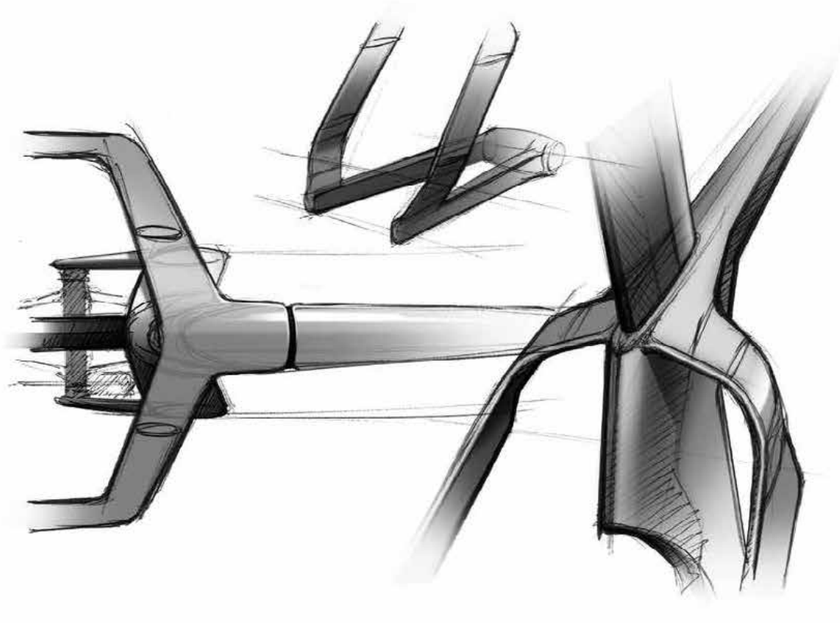
Each discipline is different. Track, Triathlon and Time Trial.
4 Bikes – 4 Different Strength - 4 Different Requirements.

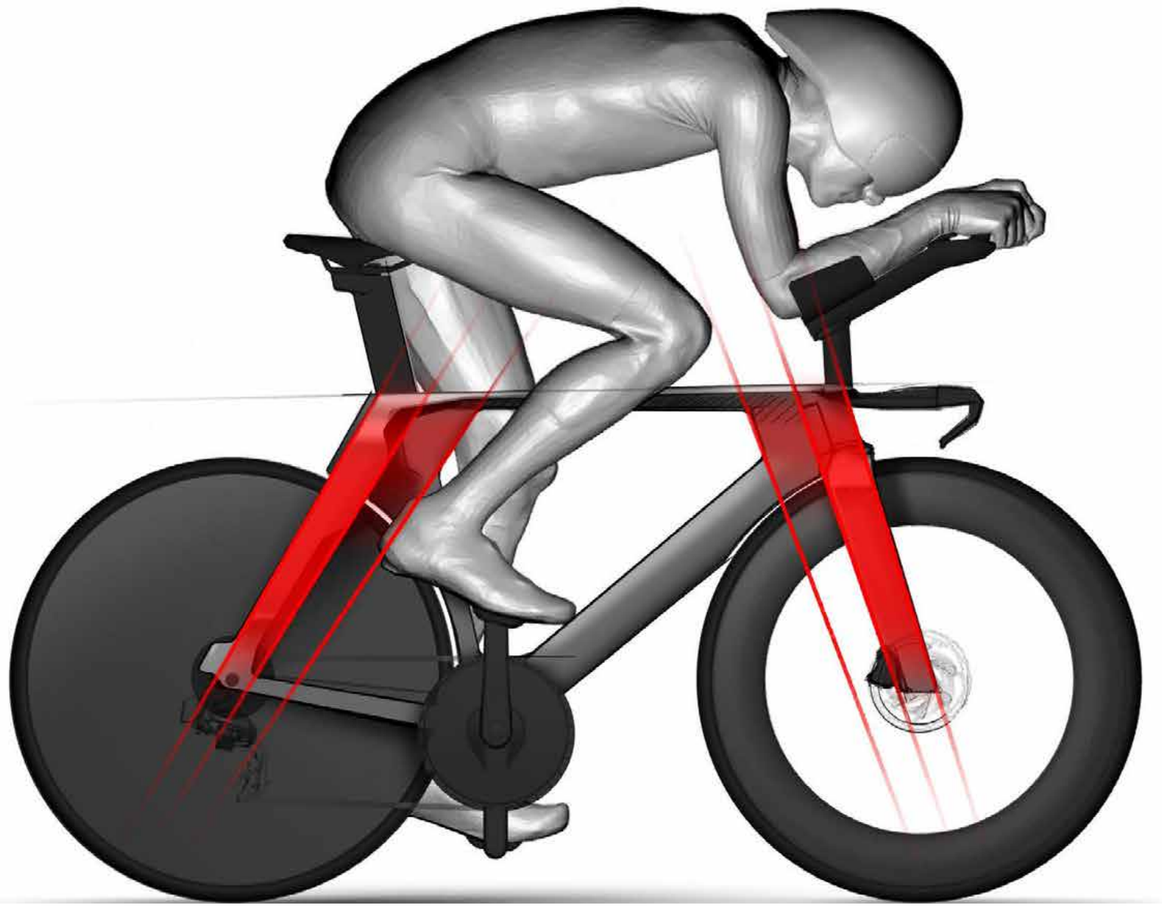
We have combined the strength of
Timemachine 01 Gen3, Trackmachine 01 Gen2, Speedmachine 01

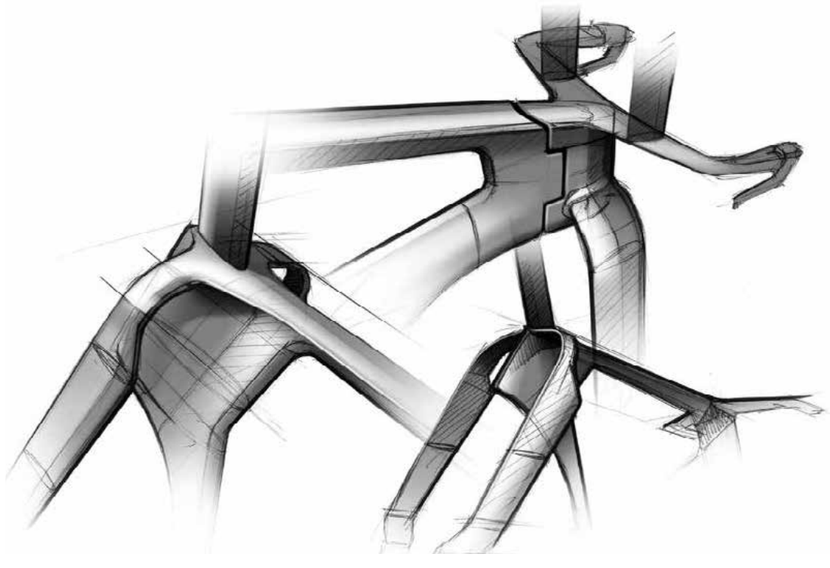
Learnings and proven solutions of previous bikes gave birth to our Frankenbike.

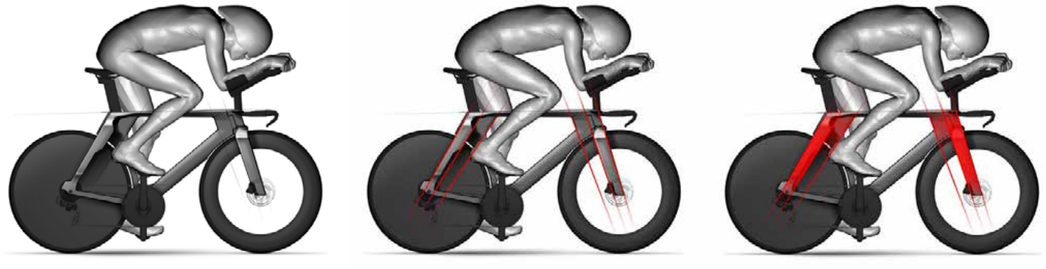
	Experience	Test Speed	UCI Compliance	Bike Weight	Yaw Angle Range	Yaw Angle Weight	
Trackmachine 01	Track	55 kph	100%	Not important	0° only		
Speedmachine 01	Triathlon LD	45 kph	Yes but ...	Important	Wide Range		
Timemachine 01 Gen3	Triathlon LD & Time Trial	45 kph	100%	Important	Wide Range		
Timemachine Mpc. Gen4	Time Trial	**55 kph**	100%	Not that important	Low Range		

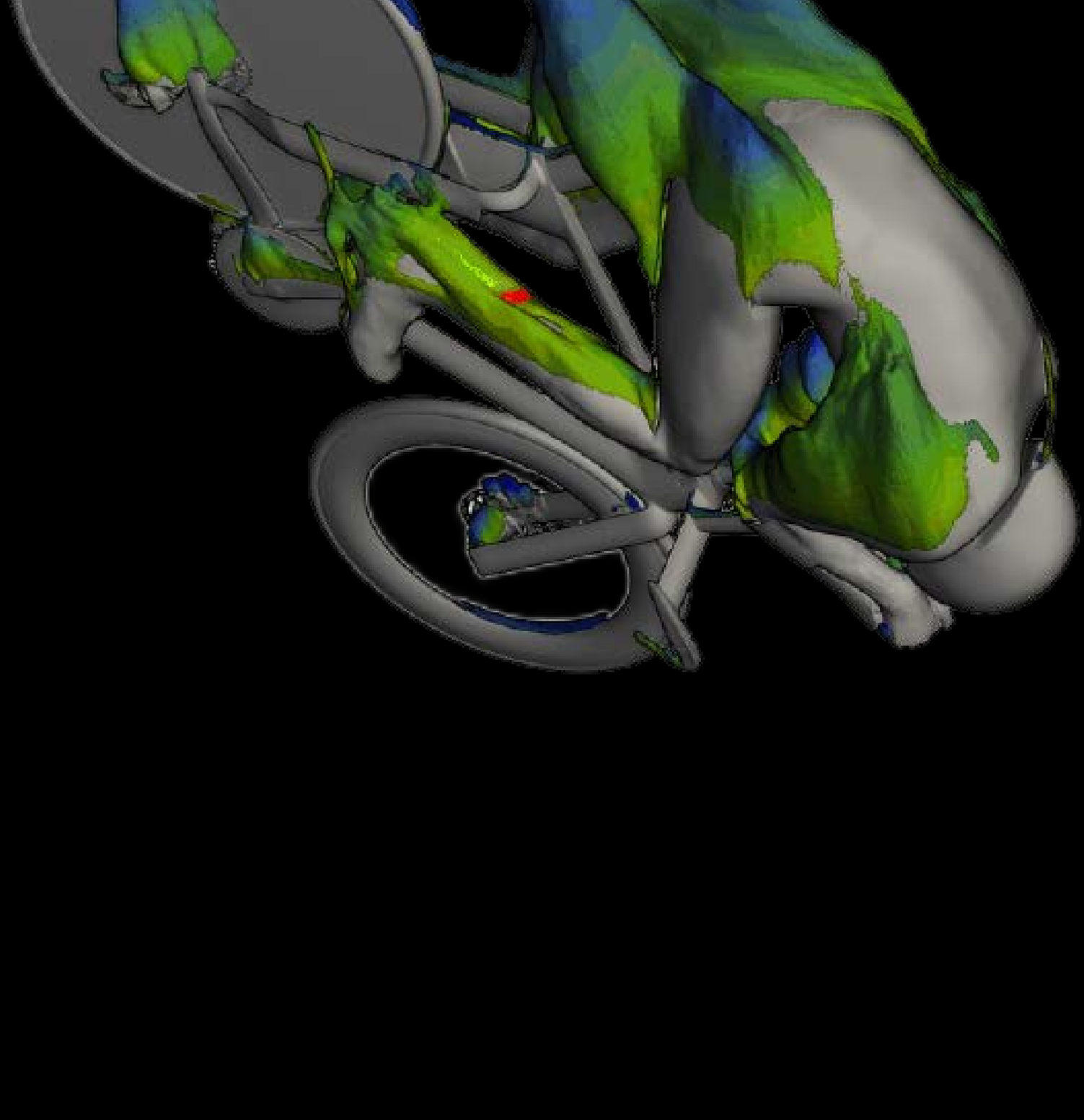
AeroSynthesis
Design without affecting performance











AeroSynthesis
CFD Simulations

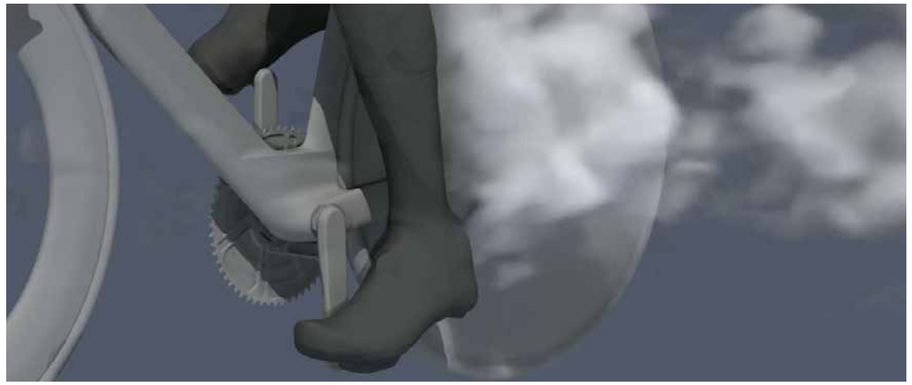
We began by defining each shape with precise aerodynamic parameters.

Dozens of CFD cycles followed, analyzing and refining every contour to extract marginal gains wherever they exist.

We ran so many CFD iterations... that we've burnt through numerous computer screens.

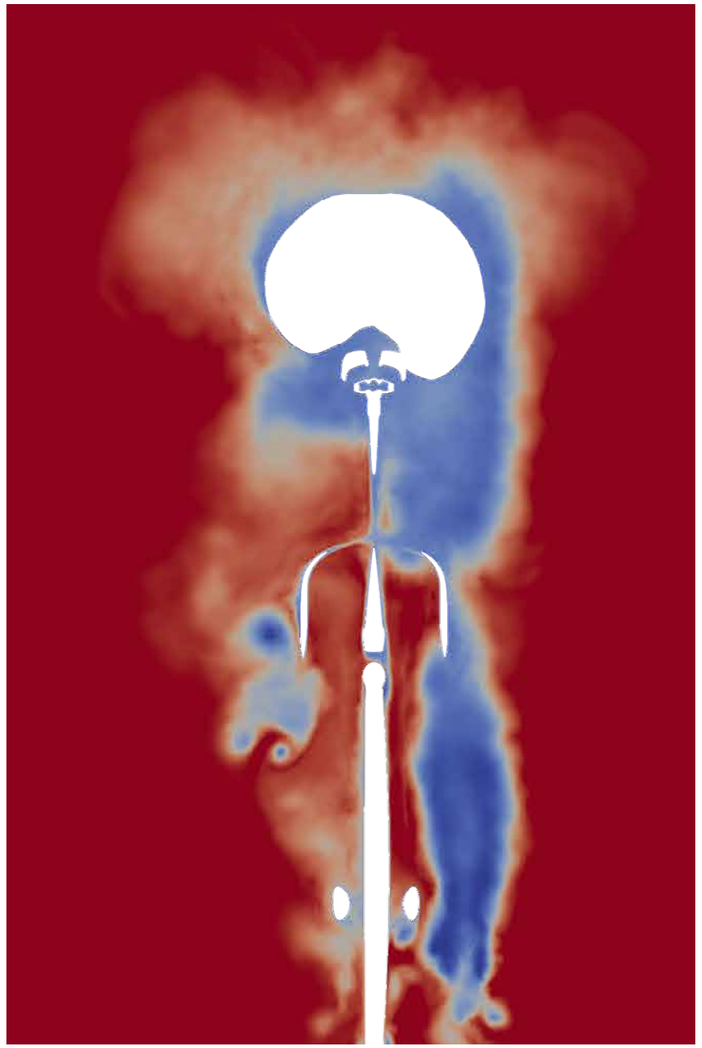
Brake levers FlowSpine

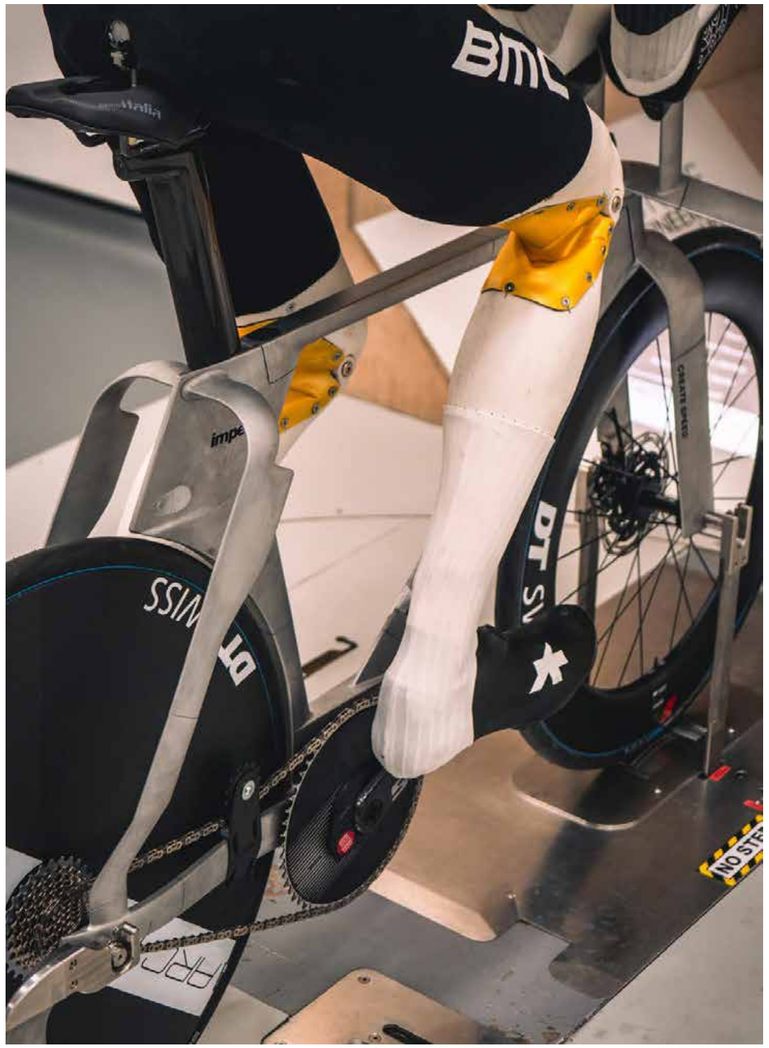
Brake caliper SpeedTilt



Mariana Bottom Bracket

Rear dropouts SpeedFin Extensions





Combination of CFD and Wind Tunnel simulations for educated decisions.

AeroSynthesis
System interactions

From concept to proof.

The Halo+ fork displays the widest crown possible within the UCI limits and pushes apart the fork legs. This AeroSynthesis design accounts for drag effects on both components and rider’s legs.

The wide stance Payload stays smooth the rider’s leg wake, cutting turbulence and improving overall aerodynamic efficiency.

The SpeedSlab accounts for the wheel spinning volume to reduce the system drag.

AeroSynthesis Prototyping

Impec Lab engineers turned the idea into a working piece of technology.

Rather than limiting ourselves to conventional wind-tunnel mockups, we engineered a modular 3D-printed alloy prototype.

Versatile enough for rapid iteration, and robust enough that riding it became a realistic goal.

impec lab

AeroSynthesis Wind Tunnel

We complemented our CFD work with multiple wind-tunnel sessions, using real airflow to refine our insights and confirm every aerodynamic decision with uncompromising precision under real-world airflow conditions.

This work builds on extensive BMC wind-tunnel experience, using proven platforms such as the Trackmachine, Speedmachine, and Timemachine as reference benchmarks.

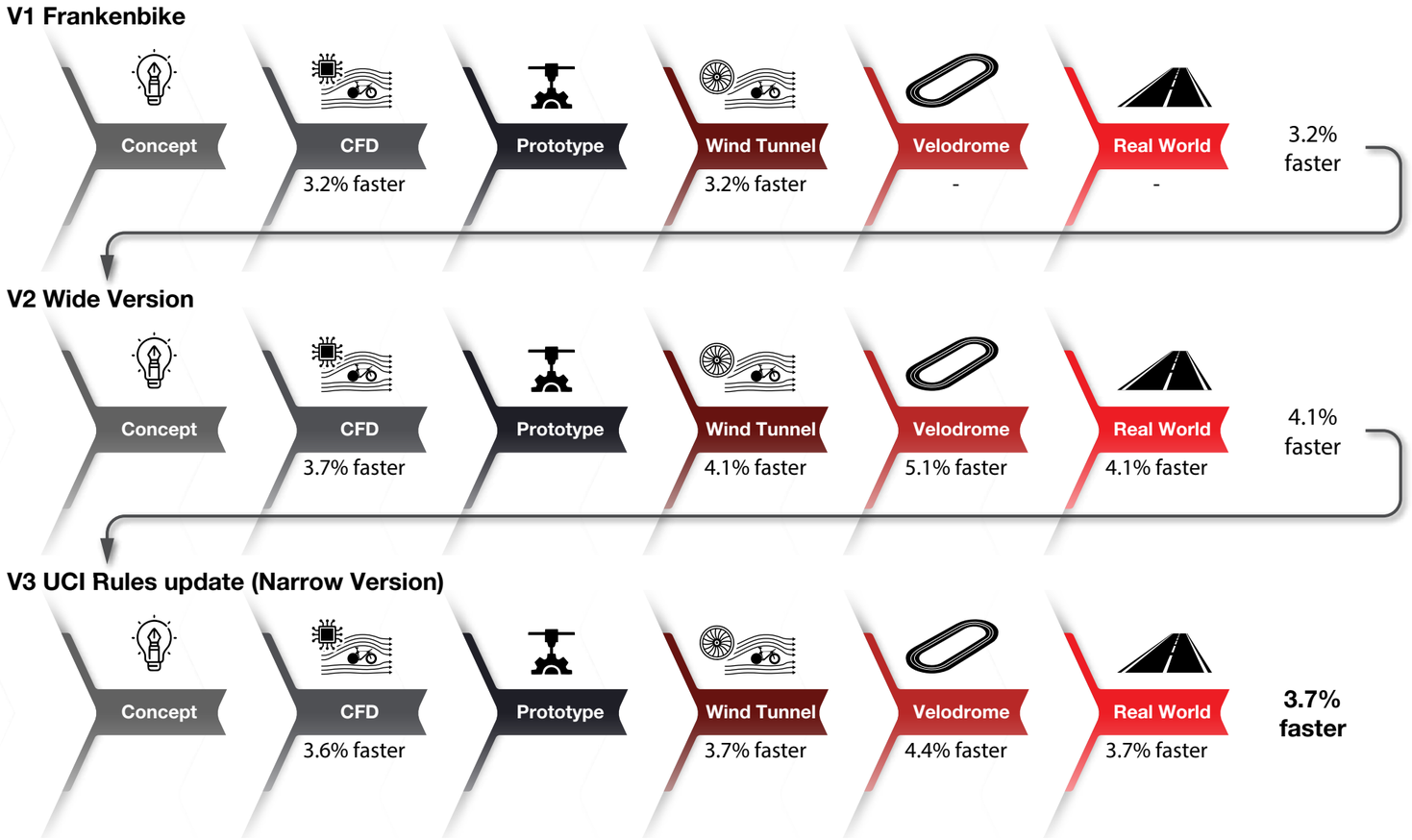
Key Wind Tunnel sessions:
First Session: December 2024
Second Session: February 2025
Third Session: August 2025

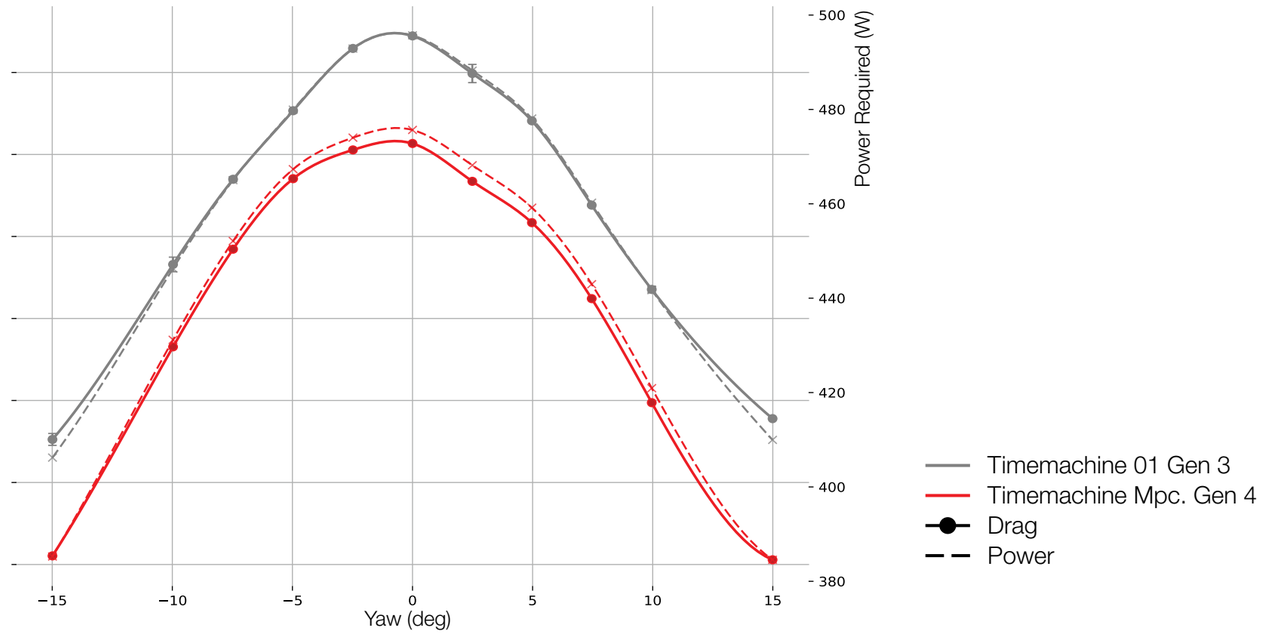
AeroSynthesis
Velodrome and Real World

The next step was reality: multiple velodrome tests with live athletes.

Ridden at rolling speed and at full power, the prototype revealed whether our wind-tunnel gains would stand up outside controlled conditions.

Results validated with
Stefan Küng, Yannis Voisard,
Michael Storer, Maikel Zijlaard.





AeroSynthesis
The Story in Numbers

A 3.7% drag reduction, yaw-weighted. Meaning one thing: faster, no matter the wind.

Put 450 W into the pedals and the numbers speak for themselves:

- current Timemachine: 55.0 kph
- new Timemachine: 55.7 kph

That's a 33-second gain over a 40 km TT.

Validated across frame sizes. Verified with multiple riders. Proven everywhere.

- Wind tunnel: 3.7% faster
- Track testing: 4.4% faster
- Real World testing: 3.7% faster

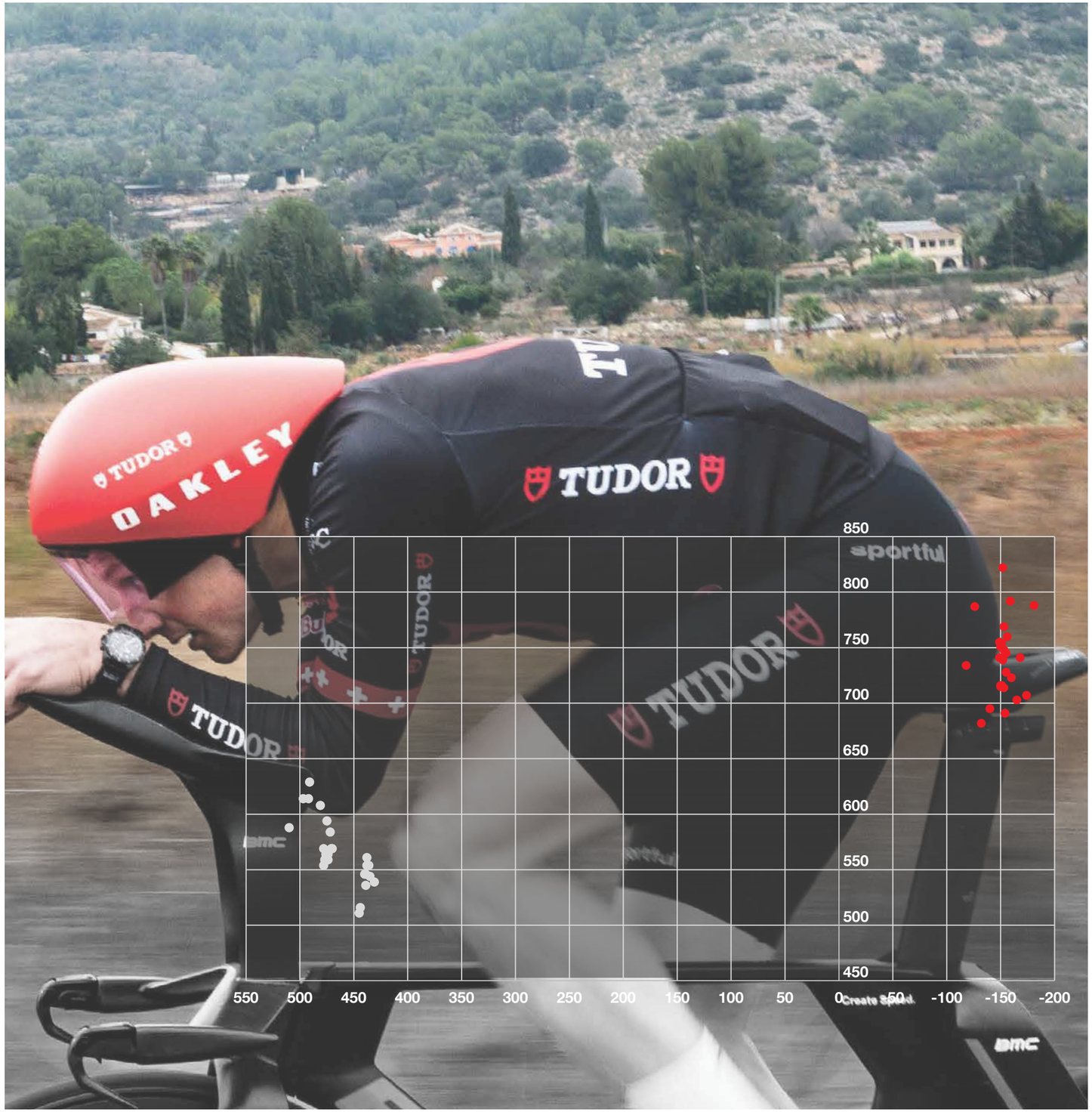
Speed Factors

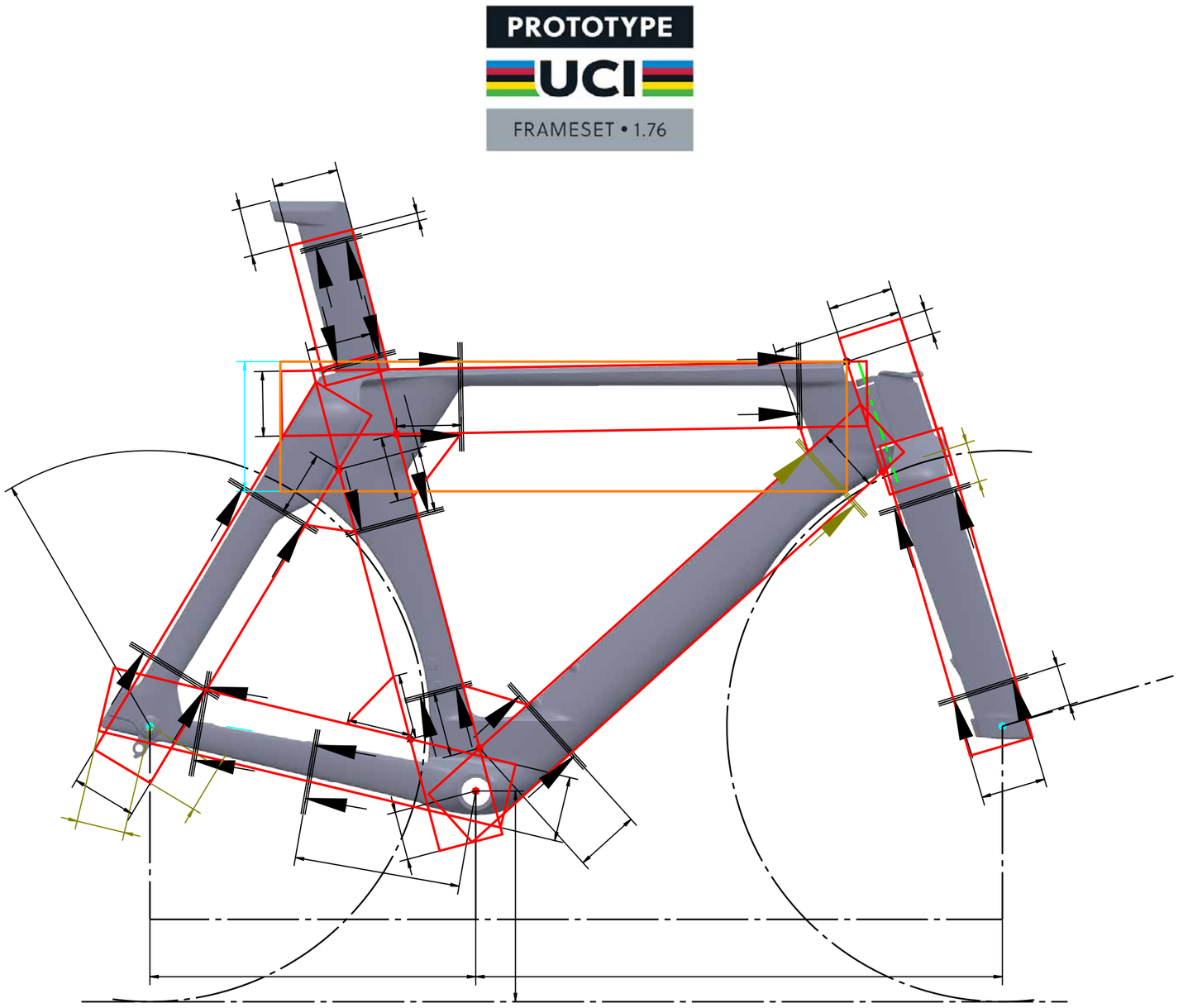
Speed Factors
Position Needs and Rules

The ability for riders to find their fastest fit within the rules as set out by the UCI.

We made use of all current and future known position coordinates. The frame geometry is engineered to accommodate each rider's position and natural variability while preserving uncompromised aerodynamic performance.

It fully complies with UCI position regulations, and is informed by a meticulously refined dataset that accurately maps the biomechanical and aerodynamic factors driving real-world speed.





Speed Factors
UCI Frameset rules

The Timemachine Mpc. has been approved by the UCI to its latest rules, with frame box dimensions and tube minimum and maximum profiles engineered to deliver the fastest possible aerodynamic performance within these rules.

This framework also anticipates the regulatory update announced in June 2025, which came into immediate effect in January 2026, ensuring full compliance while maintaining a competitive aerodynamic advantage.

Speed Factors
The Fastest Time Trial Bike. Not Just in the Wind Tunnel.

Through a seamless blend of design and engineering, we created the Timemachine Mpc., a bike engineered with ultimate stiffness to transfer every watt from the world's best time-trial specialists directly to the road. The result is phenomenal efficiency. Single or double setups, oversized chainrings, chain guides, full-mount dropouts — the Timemachine Mpc. is not only built for pure speed, it's built for the future.
Hidden within its tubes and steering assembly, our refined geometry and front-end architecture deliver exceptional stability and handling. Whether on the flats, in descents, on long straights, or tight corners, the Timemachine Mpc. makes you faster everywhere.

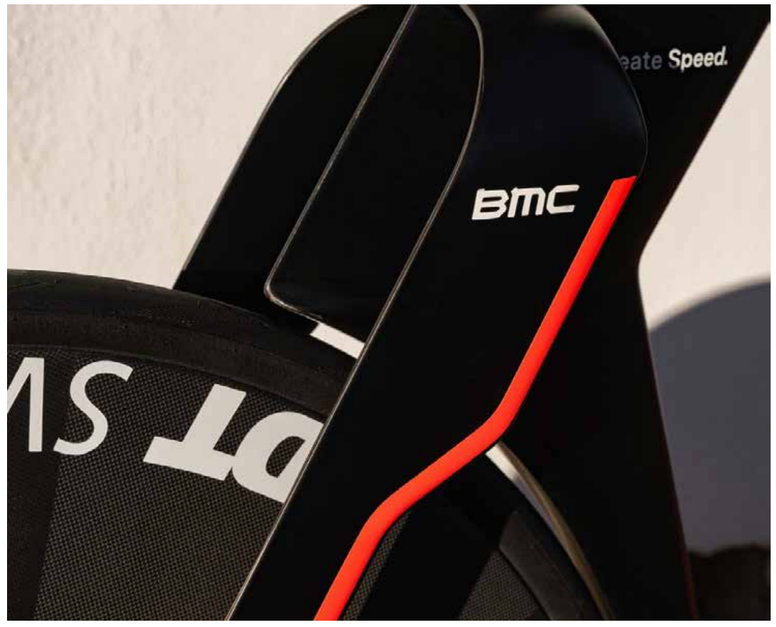
Performance booster
Full Power Transfer.

High stiffness levels for pedaling efficiency and steering / control.

Maximum Compatibility
Unconditionally fast in TT-application.

FullMount dropout.
Chainring clearance for big rings.

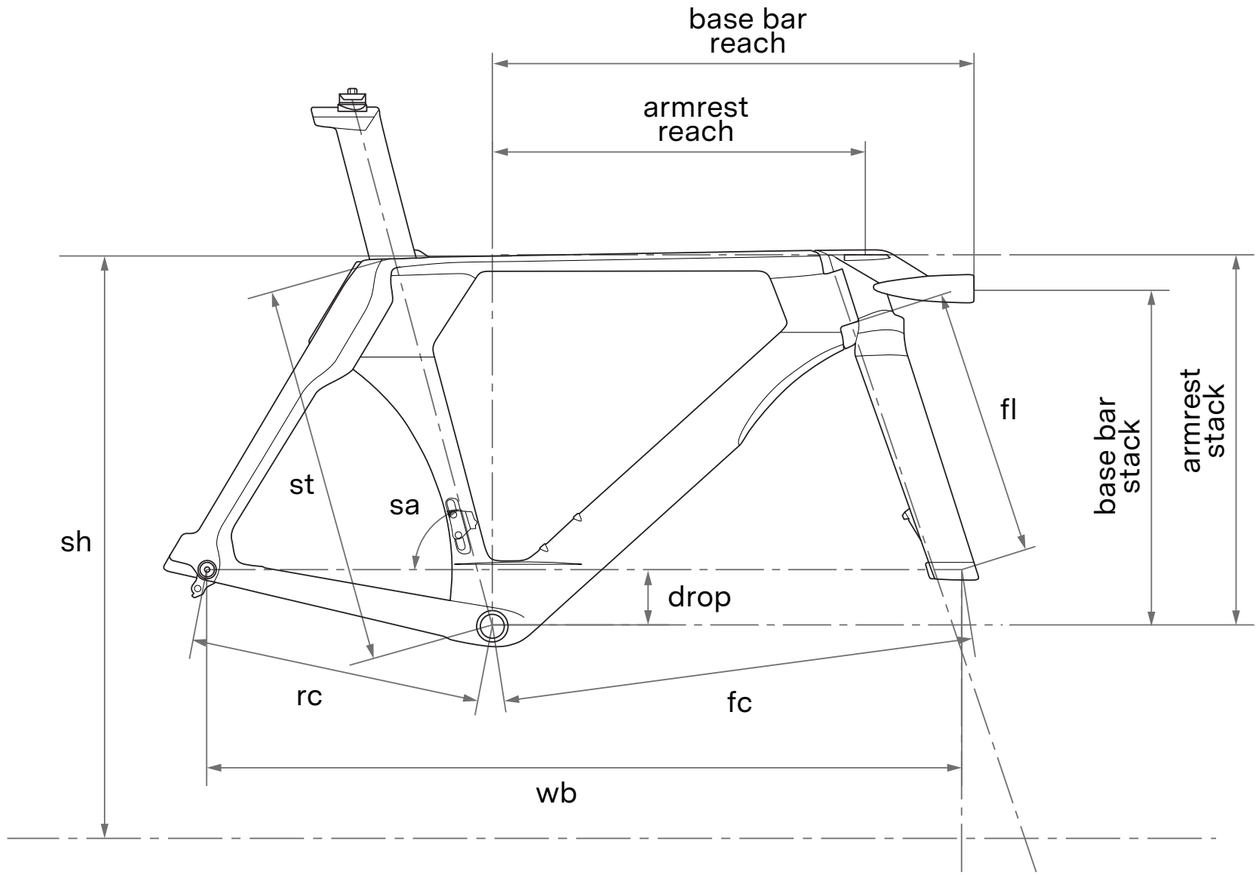
Best handling
Full confidence.



Special steering geometry.
Bigger tire clearance up to 30mm measured.

Speed Factors
Geometry

	S	ML
Armrest Stack	495.7	523.7
Armrest Reach	502.8	533.7
Base bar Stack	441	469
Base bar Reach	647	678
Base bar width	O2O:353mm | C2C:328mm	O2O:353mm | C2C:328mm
Seat Tube (st)	507	537
Seat Tube Angle ° (sa)	75.2°	75.2°
Front Center (fc)	610	650
Rear Center (rc)	410	410
Wheelbase (wb)	1012	1052
BB drop (drop)	80	80
Fork Length (fl)	348	348
Standover Height (sh)	756	784
Seatpost offsets	2 seatposts: forward: -5.5 / -18 / -30.5 / -43 standard: -18 / 0 / +18 / +36	2 seatposts: forward: -5.5 / -18 / -30.5 / -43 standard: -18 / 0 / +18 / +36



RIDER, COMPONENTS, FRAMESET:
3.7% FASTER SYSTEM

2 seatposts
8 different offsets

SpeedSlab seat tube

PayloadFins stays

Bottle Cage mount

Rear Dropouts SpeedFins

Full Mount dropouts

PressFit 86.5 bb

Profile Aeria interface

UCI compliant

Brake levers FlowSpine

Halo+ Fork

Secret Steering formula

Left Dropout SpeedTilt

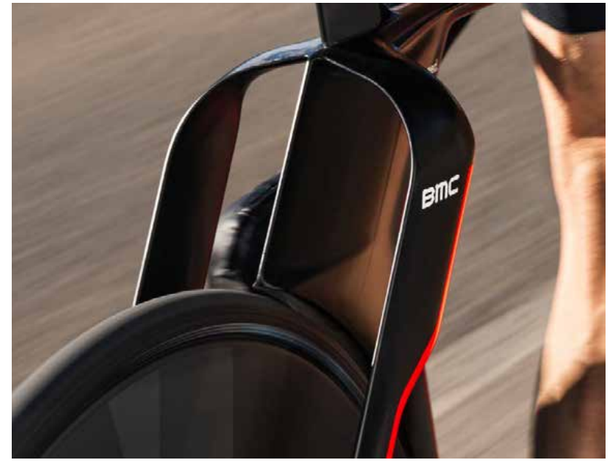
Chainguide

Speed Factors
Technology Glossary

The **SpeedTilt** fork dropout places the brake in a precisely optimized position, channeling airflow smoothly around it for superior aerodynamics.

The **Halo+** fork maximizes crown width within UCI limits, pushing the legs outward for improved performance. A central fin directs airflow efficiently toward the downtube.

The base bar's **FlowSpine** integrates seamlessly with SRAM brake levers, streamlining airflow behind the brake reservoir while providing a more secure, confident braking grip.



SpeedSlab delivers the greatest drag gains over the previous Timemachine, shaped around the team's max tire size and optimized to UCI limits. A strengthened front edge adds stiffness and cuts drag.

Mariana wide bottom bracket uses an asymmetric design to open up space for the rear wheel and let its airflow cleanly separate from the chainstay. It also accommodates oversized chainrings for 1x and 2x setups.

The narrow headtube and track-inspired **Bayonet** system use compact, tension-free needle bearings for a cleaner, stiffer front-end setup.

PayloadFins seatstays stay tucked behind the rider's legs to cut drag and generate a slight forward airflow effect, with deep seat-tube integration and full heel clearance.

Inward **SpeedFins** clean airflow to the UCI-max 60 mm tolerance, reducing drag around the cassette and rear brake.

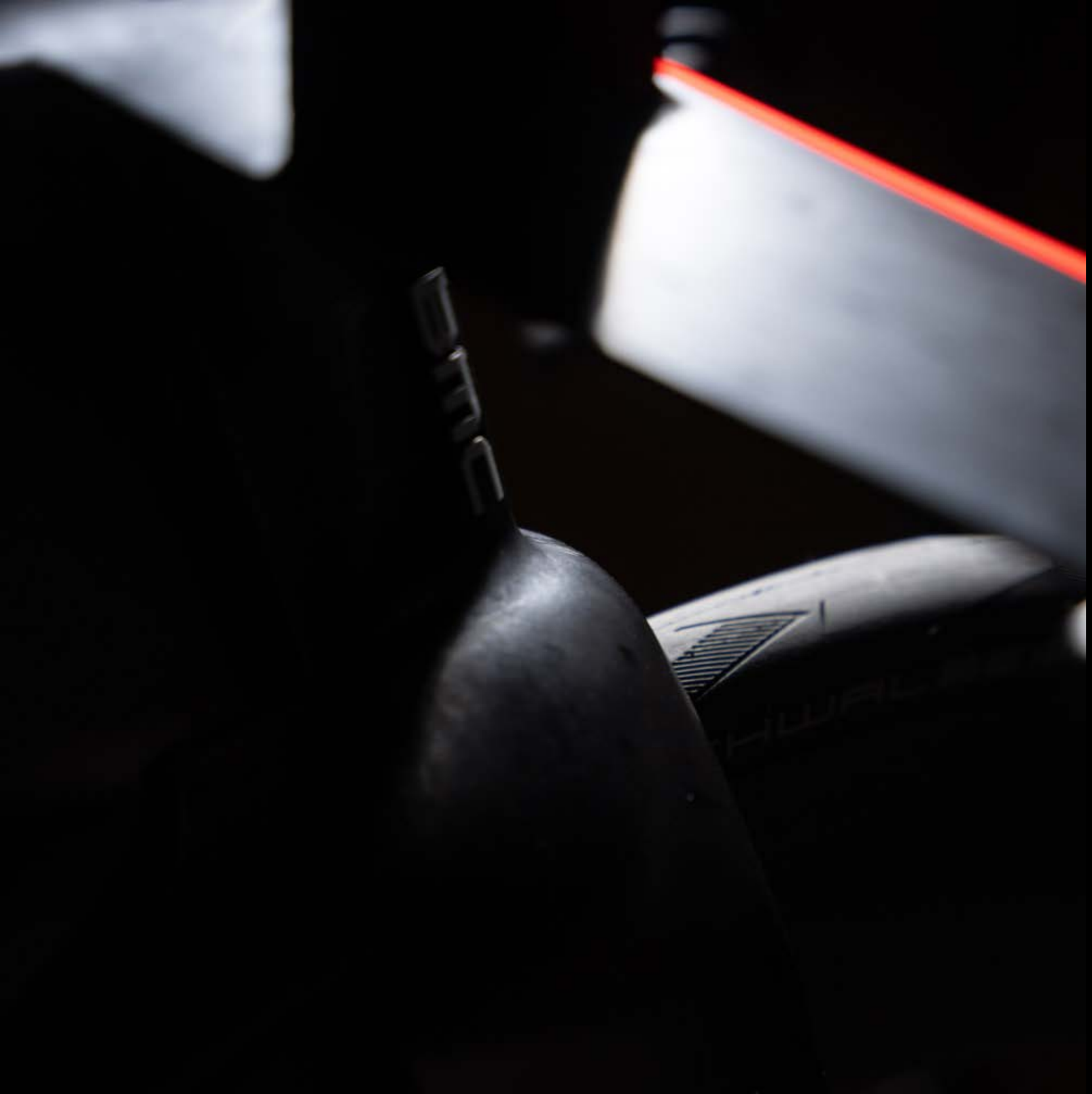
Masterpiece

Iconic is never an accident.

A Masterpiece is entirely different from other components. It demands superior skillsets and the most advanced tools. This is a level of manufacturing excellence that only a few Masters can deliver.

It takes too long to make each one.
We can’t make very many.
They will be too expensive.
It’s unnecessary.

But we can.



Masterpiece
Iconic is never an accident

The particular shapes and high performance requirements of the Timemachine demand our Masterpiece treatment.

It requires superior skillsets and the most advanced tools.

This is a level of manufacturing excellence that only a few Masters can deliver.

Masterpiece
When Every Gain Counts

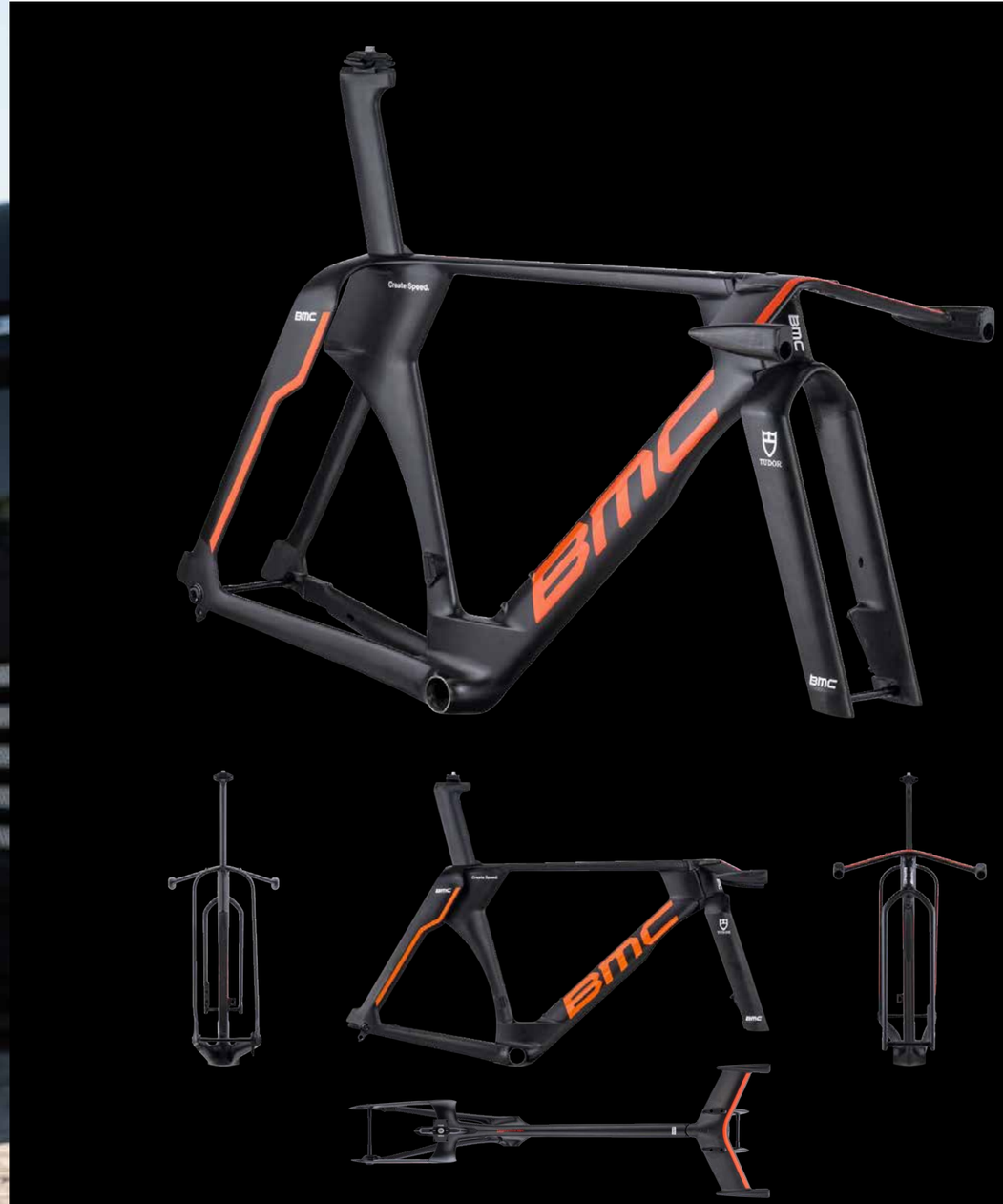
Our World Tour TT Riders deserve the best we can provide.

We have already provided key Tudor Pro Cycling Team riders with the Teammachine R Mpc.

We are committing to another level with the Timemachine Mpc.

- One piece true monocoque.
- Autoclave curing process.
- Jointless.
- Precise shapes.
- Paintless.
- Accurate weight and stiffness.

Precise. Reliable. Fast.



Timemachine Mpc. Module VAR1

MSRP	18 999 EUR 21 299 USD 18 999 CHF

Questions & Answers

Is this a team specific bike or will it also be available for retail?
The Timemachine Mpc. is available for sale to the public. Not only to comply with UCI rules, we know riders will ask for it.

When will the bike be officially launched and available to the public?
Public release date is set on February 20th 2026. Product availability will be guaranteed at this date but extremly limited due to production and supply chain.

Will it come as a complete bike or frameset only?
As a module including frame, fork, basebar, seatpost, thru-axles,and other small parts.
It does not include the extensions and armrests that are custom made for the rider fit and ergonomics.

What sizes are planned?
S (small) and ML (medium-large). Geometry details are provided on this document and online.

How do you fit different athletes on only 2 sizes?
The key for fitting relies with Stack and Reach. The fit is then finalized with the creation of a set of custom extensions and armrests.

What are the differences between this bike and Speedmachine 01?
Speedmachine is the fastest Triathlon bike. Ideal for half and full Ironman race distances. It’s designed for lower speed aero, is not as restricted by the UCI rules and offers hydration and storage features.
Timemachine Mpc. is solely designed for the elite of the World Tour athletes focusing on high speeds and UCI rules.

What does Mpc. mean?
Mpc. stands for Masterpiece. It’s the highest level of technology available: best materials, best manufacturing processes, best finishes. All in for the best performance imaginable.

How does it compare to competitor’s bikes?
Of course we feel we have the fastest bike!

Why doesn’t Tudor race with the Speedmachine 01?
Tudor Pro Cycling Team has evaluated both our Timemachine 01 Gen 3 and the Speedmachine 01. If Speedmachine is faster, it is less convinient than the Timemachine setup for pure UCI sanctioned race.

What about the rest of the cockpit?
At this level, we can’t leave room for approximation. Timemachine Mpc. is designed to receive fully custom extensions and armrests set. Tudor Pro Cycling gets custom made sets for each rider fit and ergonomics.

Is this UCI legal?
All our Trackmachine 01, Speedmachine 01, Timemachine 01 (Gen 3), and the all new Timemachine Mpc. (Gen 4) are UCI approved as modules (frameset, fork, seatpost, and base bar).

You can race these framesets as long as you follow UCI components restrictions and UCI position restrictions.

BMC Switzerland AG | Sportstrasse 49 | CH-2540 Grenchen | Switzerland | +41 32 654 14 54 | info@bmc-switzerland.com | www.bmc-switzerland.com