

Stingr Smart Helmet Concept

- 01 A complete intelligent safety system**
- 02 Helmets finally got smart**
- 03 Features**
- 04 Core electronic features**
- 05 Visor functionality**
- 06 FAQs**

Above all, helmets should protect the most intelligent device ever created: our head, our brain.

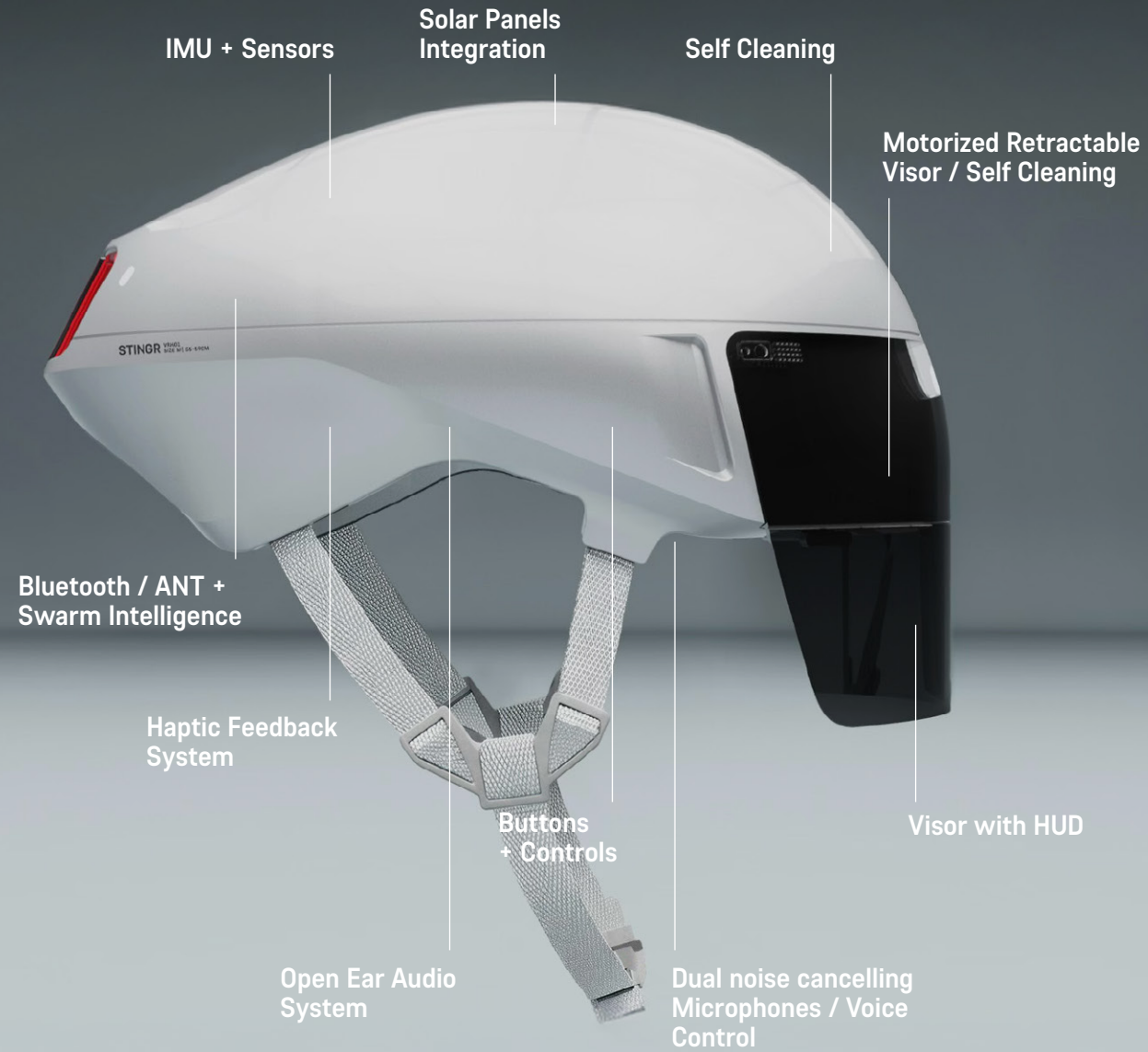
What was once just a hard shell has now evolved into something entirely new: a second brain.

A helmet packed with smart technology. It enhances your senses when you need them most – imagine racing downhill at 80 km/h on the Stelvio PASS, transitioning from blinding sunlight into the darkness of a wet tunnel.

The smart helmet warns you and displays all the essential information exactly where you need it: right in front of your eyes.

Canyon STINGR: Helmets finally got smart.

FEATURES



Safety

RADAR / VEHICLE ALERTS
BRAKE LIGHT ACTIVATION
CRASH DETECTION
GROUP HAZARD WARNING

Navigation

TURN-BY-TURN DIRECTIONS
ROUTE GUIDANCE
DISTANCE TO DESTINATION
ELEVATION INFO

Performance

SPEED, DISTANCE, TIME
CADENCE, POWER, HR
ELEVATION, GRADIENT
CALORIES, PERFORMANCE

Settings

HUD LAYOUT
DATAFIELDS
ALERT PREFERENCES
BUTTON SHORTCUTS

Phone

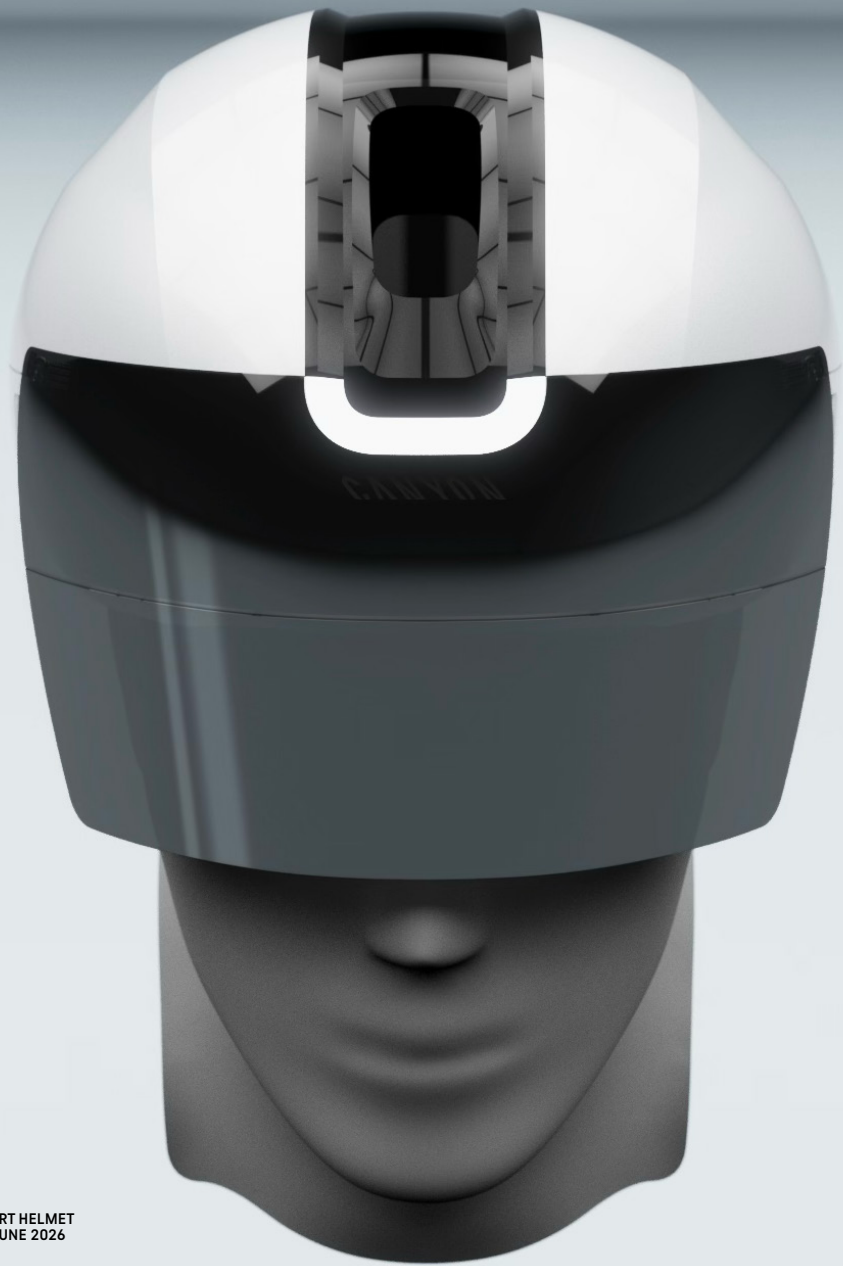
CALLS HANDS FREE
VOICE ASSISTANT
GROUP MESSAGING
AUDIO NOTIFICATIONS

Music

MUSIC PLAYBACK
PODCAST
VOLUME CONTROL
TRACK SKIP

Visor

VISOR CONTROL
DISPLAY BRIGHTNESS
AUDIO SETTINGS
POWER MANAGEMENT



STINGR SMART HELMET
CONCEPT / JUNE 2026

This future Canyon Stingr Smart helmet is packed with features:

01 Motorized Visor + HUD Display:

The transparent OLED (TOLED) panel acts simultaneously as a protective visor and a heads-up display (HUD) driven by a micro motor, retracting/storing or deploying it on command.

02 Self-Cleaning during retraction:

Every time the visor retracts into the helmet, it passes through a stationary wiper blade that cleans the exterior surface. The wiper is passive (i.e. no motor, no electronics) which means no additional power consumption is needed for cleaning.

03 Multi-Protocol Sensor Hub (Phone-Independent):

The helmet operates completely independently of a phone during a ride.

Once sensors are paired (one-time setup via a companion app), the helmet maintains direct connections and displays all metrics on the HUD autonomously. The phone or bike computer can add optional extras (navigation, notifications, etc) but is never required for core cycling data.

04 Touch Button View-Switching:

With three touch pads on the helmet temple area, the rider can switch between pre-programmed HUD views and control the visor (all configurable via the companion app).

05 Voice Control:

The rider can speak commands without needing to remove their hands from the bars. The system uses a custom wake word ("Hey Canyon") followed by a command, (e.g. "Hey Canyon, visor down", "Hey Canyon, show navigation", "Hey Canyon, what's my power?", etc) all processed entirely on-device with no cloud dependency.

06 Audio System (Open-Ear Speakers):

Speakers positioned in front of the ear deliver audio including phone calls, navigation prompts, and safety alerts while keeping ears open to ambient traffic sounds for safety.

07 Haptic Feedback System:

Integrated vibration alerts provide subtle feedback when touch buttons are pressed on the helmet.

08 Swarm Intelligence / Group Ride Safety:

When multiple Canyon helmets are within range, they automatically form a low-power mesh network. Each helmet shares its state (position, speed, braking, hazards) so every rider in the group benefits from the collective awareness of all riders. Functionality includes Braking cascade, Forward hazards, Rear vehicle warning, Crash alert, Formation-adaption and Audio message broadcasting.

EXAMPLE OF VISOR VISION



VISOR FUNCTIONALITY



**Integrated visor. Sliding in and out.
Protection + cleaning.
Information projected into the glasses.**



Audio Feedback ●

FEATURES

Solar Panel

Indicator

Rear Light



FAQS

01 How long should the Stinger Smart helmet battery last?

The system operates on 8–15 hours per charge and charges via USB-C. The solar power would provide a top-up charge on top of this. The battery is replaceable.

02 Can the rider customise the helmet visor display?

Yes. It will be possible to scroll through various screens and select what is displayed and what is not displayed on those screens.

03 Can standard bike metrics (gear usage, Di2 battery, etc) or wearable metrics (heart rate etc) be displayed on the helmet screen if you are riding without the rest of the intelligent safety system (e.g. the bike)?

The rider can choose what is displayed based on what is most important to them.

04 Are the Stinger Smart helmet functions still usable as a standalone item without the Canyon Predict bike?

Yes. The functions of Prediction Assist, Distance Assist, Terrain Assist and Group Ride Assist would only be possible from a bike with cameras, radar feeds and Edge AI processing, but other bike data metrics could still be displayed on the helmet visor screen.

05 All of the metrics on the helmet visor screen could be a safety risk. Is there an optimum number of metrics to display?

The idea is that the data isn't distracting. Minimal information should be displayed on the side of the screen. Only for really critical situations would you get something in the centre of the screen.

06 Would the visor or helmet be replaceable in the event of a crash?

The display can be disconnected which means either the visor or the helmet can be replaced.

07 Would low-light visors or prescription visors be available?

Yes. Low-light visors could easily be made available. Prescription visors would need some specialist expertise.

08 What material would the visor be made from?

We're looking at two kinds of technologies for the visors. Either we will utilise an OLED display visor made of OLED display, or we're looking to laminate a transparent, flexible OLED onto an existing visor.

09 How does the voice/audio system work?

The voice activation can be used to change the display on the visor. The audio can tell you information and be paired to other connected devices. Aside from voice activation the helmet also has touch button controls on the helmet temple area for visor operation, HUD view switching, and audio/navigation interaction.

10 Why does the Stinger Smart helmet offer verbal controls to the Canyon Predict system?

The idea is that the rider should not have to take their hands off the handlebars, making for a safer system.

11 How does the indicator on the helmet work? How does the system know when you are turning?

The rider would give a command on the shifter controller or a verbal command to the helmet (e.g. "turning left").

CANYON