

# | Integrated Smart-HUD Concept

Make your helmets smart

# Concept Sample of Integrated Smart-HUD



## Facts:

- // Concept sample as seen on EICMA2023
- // Uses sun visor to display information
- // Final product: Seamless integration of the optics
- // Visor remains still exchangeable
- // Concept allows maximum flexibility for you as OEM
- // Requires only mounting space and interface for integration
- // Opens various options for additional revenue

**Be the first to revolutionise the market for smart helmets with an integrated smart visor!**

# 1. Integrated HUD for common Motorcycle Helmets

## Concept 1:

**Turns your helmet into a smart helmet!**

### **Designed for common motorcycle helmets**

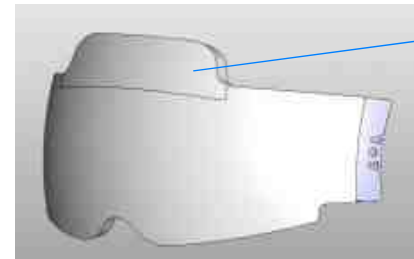
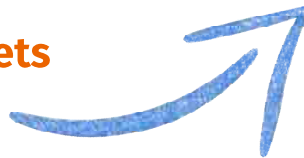
- For helmets without smart features
- Concept for modular integration
- Predefined installation space required for control electronics and battery above visor opening
- Easy to install/to retrofit
- Ideal for aftermarket business (e.g. retrofit option)

### **Sun visor**

- Self-tinting sun visor with chemically induced adjustment of the degree of darkening
- Control electronics and battery integrated in the top of the visor

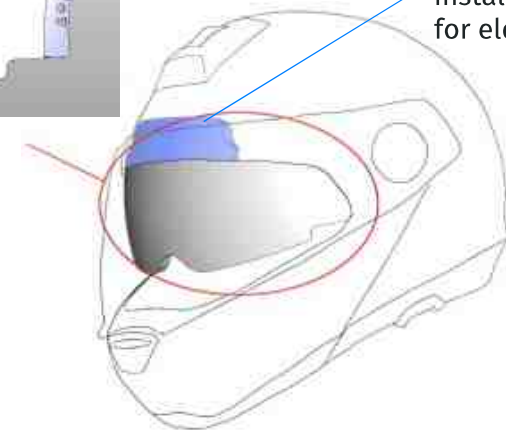
### **Battery**

- Integrated in the top of the visor



Sun visor with integrated control electronics & battery

Predefined installation space for electronics



## 2. Integrated HUD for Smart Motorcycle Helmets

### Concept 2:

#### Designed for smart motorcycle helmets

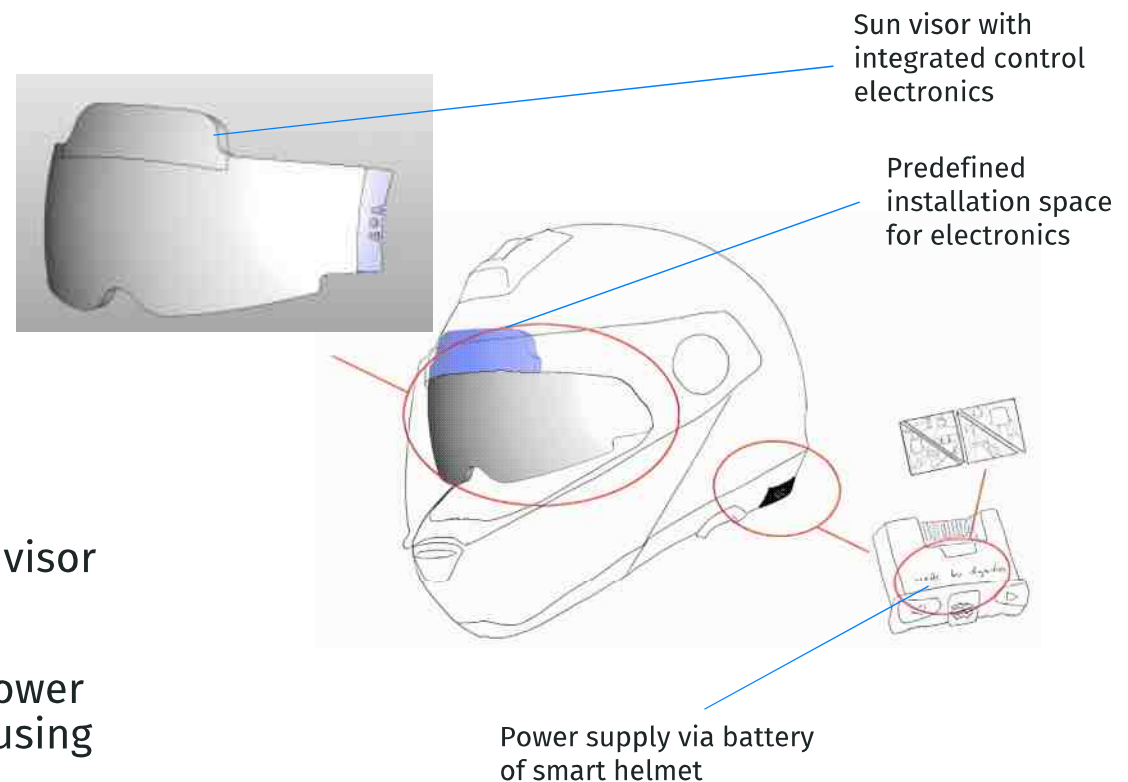
- For helmets with already integrated smart technology features
- Kit for adding HUD as an additional feature
- Connection to existing electronics/or central control unit in the helmet possible

#### Sun visor

- Self-tinting sun visor with chemically induced adjustment of the degree of darkening
- Control electronics integrated in the top of the visor

#### Battery

- No battery included - head-up display draws power from already integrated battery in separate housing



# Overview of Concepts for Helmet Integration

|   | Concept 1 - for common motorcycle helmets              | Concept 2 - for smart motorcycle helmets      |
|---|--|---|
| System Parts  | Visor incl. control electronics and integrated battery | Visor incl. control electronics and interface |
| Modular system  | yes  | yes   |
| Self-tinting visor                                      | yes  | yes   |
| Predefined Installation space required for retrofitting | yes  | no  |
| Standalone device                                       | yes  | no  |
| Suitable as retrofit option                             | yes  | no  |
| Battery included  | yes  | no – using separate battery of smart helmet   |
| App control   | required   | integration into existing app of smart helmet |





# Challenges of Developing a HUD for motorcyclists

**CHALLENGE 1: No protected place for installation**

**CHALLENGE 2: Line of sight is higher than for cars**

**CHALLENGE 3: Only the helmet remains for mounting**

**CHALLENGE 4: Small distance between display & eye**

**CHALLENGE 5: Need to reduce complexity of data displayed**

