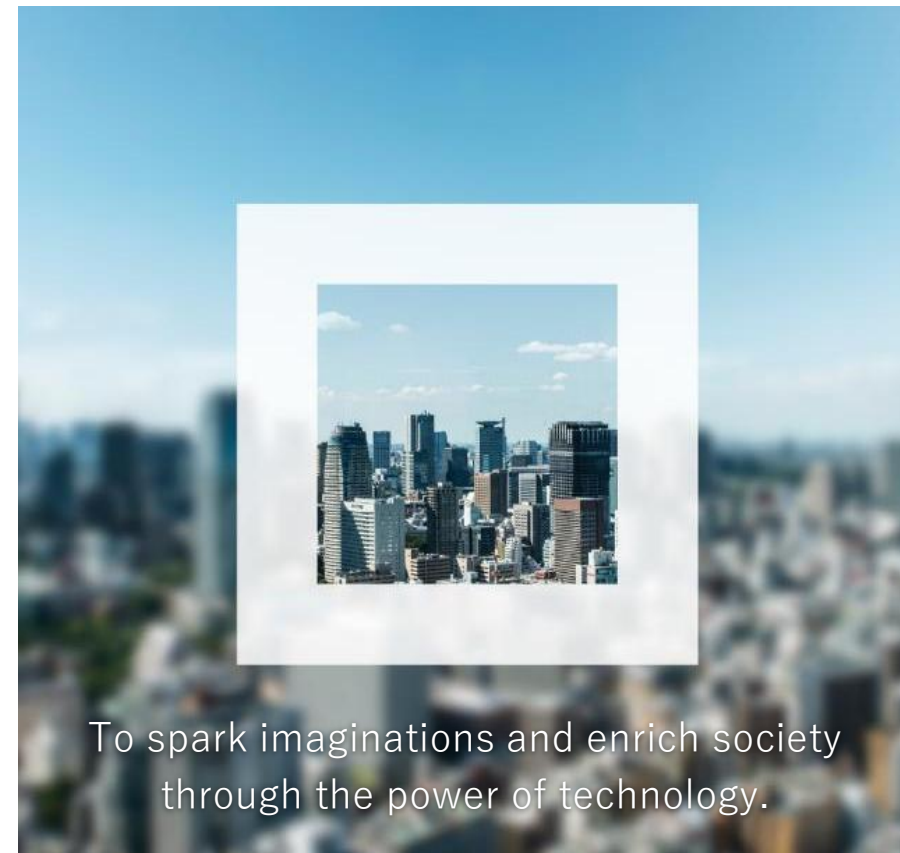


How Sony Waveguide Technology Brings AR into Eyewear Fashion

Kazue Shimizu

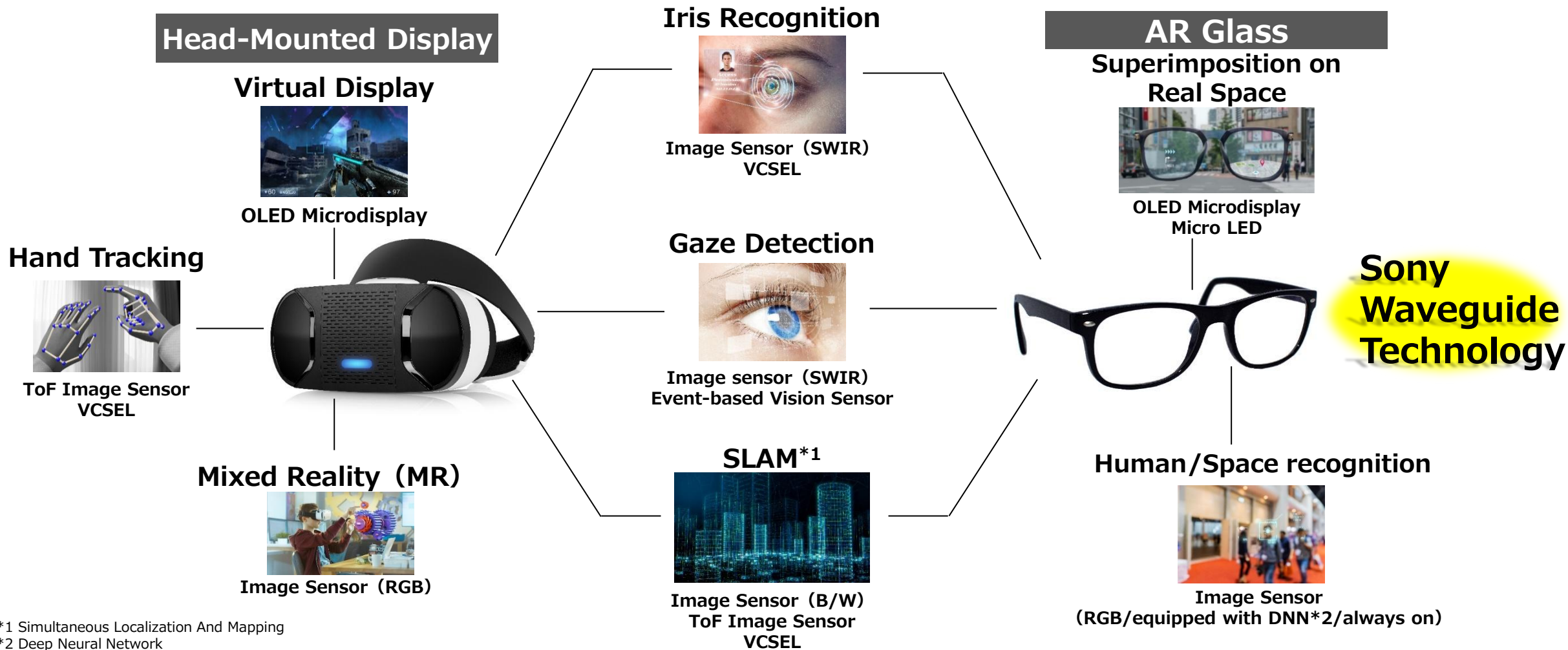
Senior AR Specialist

Sony Semiconductor Solutions



To spark imaginations and enrich society
through the power of technology.

Key Devices for ARVR



Bring Augmented Reality to eyewear fashion



Bring Augmented Reality to eyewear fashion



Bring Augmented Reality to eyewear fashion



Bring Augmented Reality to eyewear fashion



Why design freedom matters

The waveguide must serve fashion, vision, and comfort at the same time.

FASHION

Desirable frames

VISION

**Clear real and virtual
views**

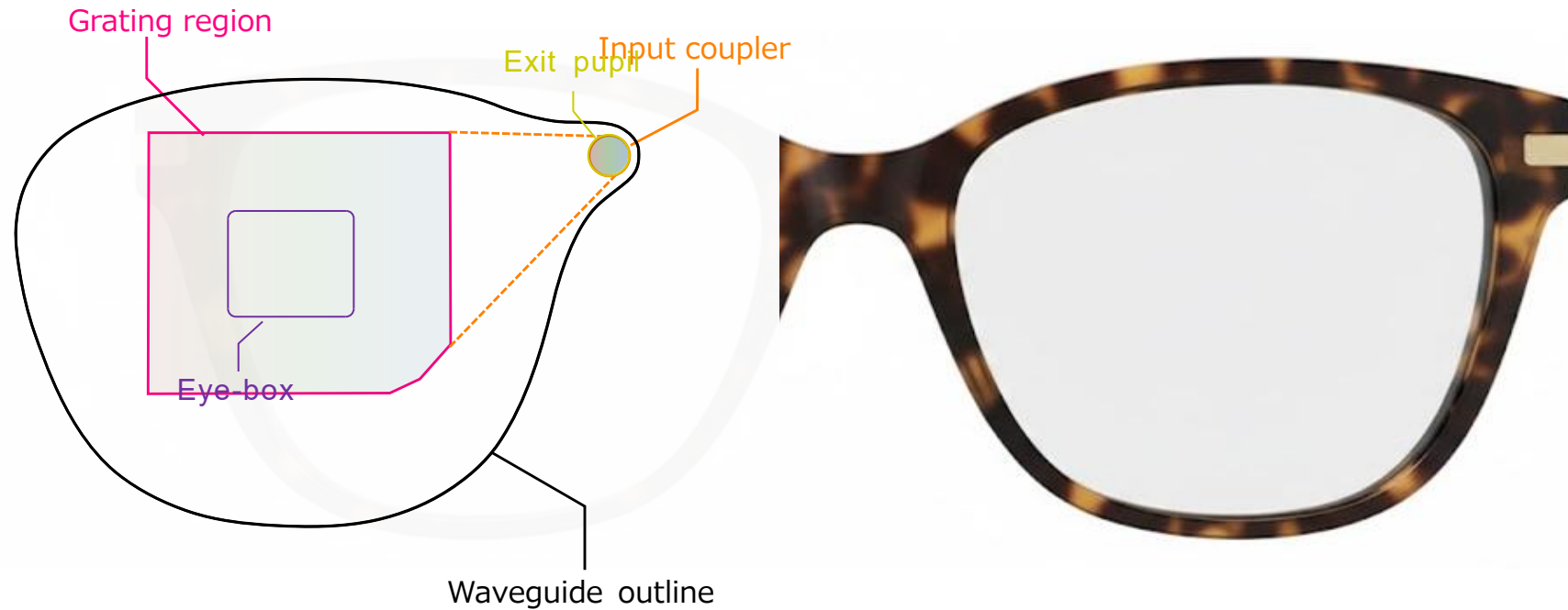
COMFORT

Thin, light, unobtrusive

Mass adoption requires all three outcomes.

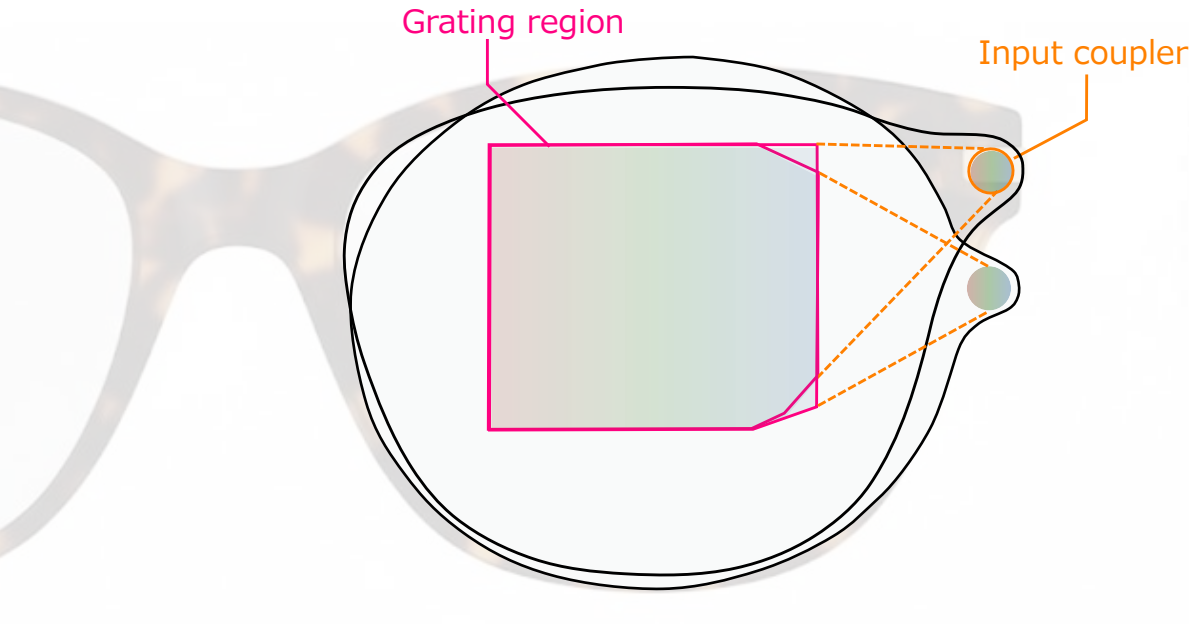
The eye-box stays. The input moves.

A simple layout allows the optics to follow the frame.



The eye-box stays. The input moves.

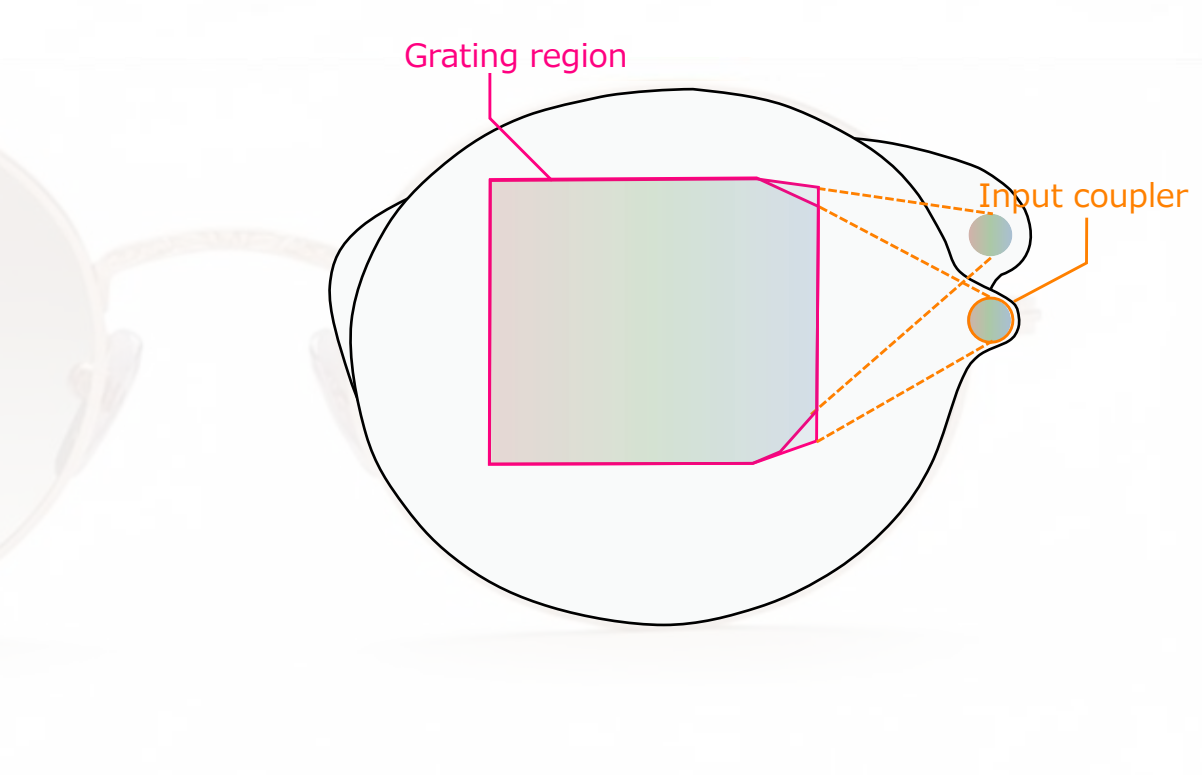
A simple layout allows the optics to follow the frame.



Layout for Oval style

The eye-box stays. The input moves.

A simple layout allows the optics to follow the frame.



Layout for Cat eye style

Eyewear is first a vision device

The user must trust both the view through the lens and the image inside it.



01 Clear real-world view

High transparency and low visible disturbance

02 Clear virtual image

Sharp, uniform, and stable image quality

Clarity is the baseline expectation of eyewear.

COMFORT

A few grams and millimeters matter

Physical and visual comfort determine daily wearability.

PHYSICAL

Weight • Balance • Thickness

VISUAL

Transparency • Uniformity • Stable viewing

The waveguide is part of the wearing experience.

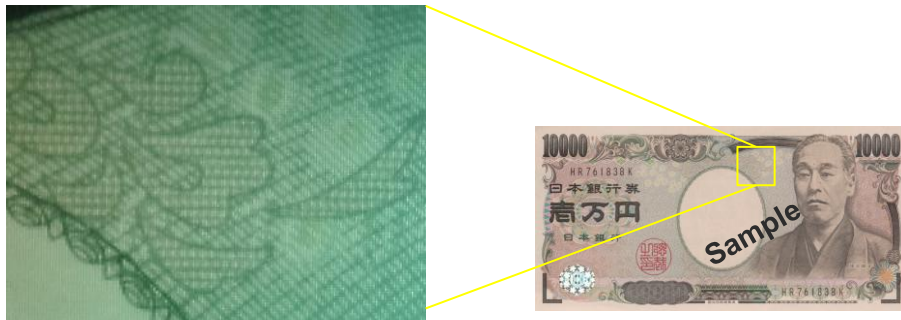


Sharp imagery and a thin optical form

Prototype results connect performance with wearability.

VISION

Good MTF



Camera captured image

COMFORT

Thin and lightweight

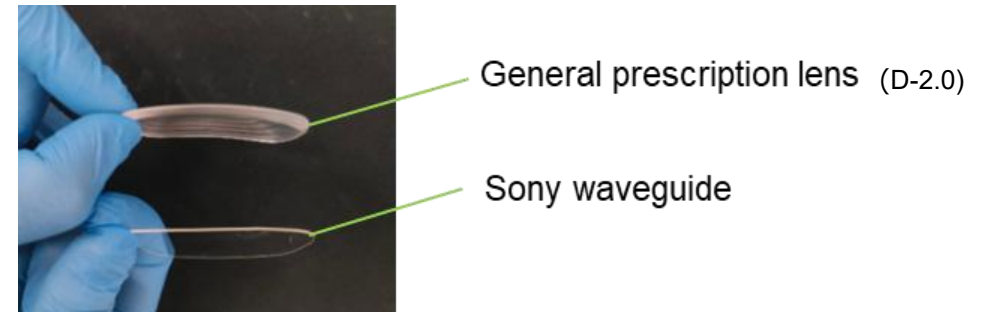


Image quality and form factor must be achieved together.

Sophisticated optical control and Practical integration

Design flexibility is supported by optimization and simplified fabrication.

ENHANCED DESIGN FLEXIBILITY

Optimized for frame and light engine

OPTICAL CONTROL

Grating structures + segmentation

OPTIMAL DESIGN

AI-powered optimization

MINIMAL MANUFACTURING
PROCESS

Single-sided NIL + no Etching + no special Coating

One waveguide platform. Three eyewear outcomes.

From component performance to product desirability.

FASHION

Design freedom

Frame-specific geometry

Desirable to wear.

VISION

Clear imagery

Controlled optical paths

Clear to trust.

COMFORT

Thin architecture

Low-profile integration

Light to forget.

Bring Augmented Reality to eyewear fashion



SONY

Thank you

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