Target Overview

ART►
Advanced Realtime Tracking

Targets consist of several markers (minimum 4), and provide 6DOF (degrees of freedom) data.
We distinguish between **passive** and **active** types.
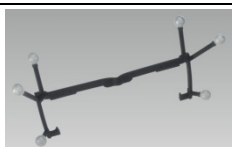
- **passive reflective**: glasses targets, HMD targets, hand & tree targets, customized/DIY
- **active led**:
  - Fingertracking targets
  - call us to discuss your requirements
  - evaluation kit available

In addition to our **standard targets** we offer several construction sets for your DIY targets and **customized developments**.
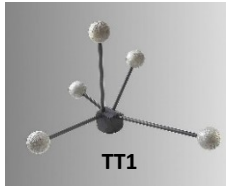
GLASSES TARGETS

For head tracking in passive or active stereo systems tracking targets must be affixed to the shutter glasses.
ART offers lightweight generic targets as well as several adapted targets (e.g. clip-on) for a range of commercially available shutter glasses.
For some brands of glasses we offer the smaller and less obtrusive target geometry 8 (e.g. EGT8) additionally to the bigger, function optimized geometries. You may choose from several geometries to equip a multi user set up.

Passive glasses targets*			
Shutter glasses	**ART short name**	**target geometry**	**picture**
ART Glasses Target	AG2T	4/5	AG2T5
Generic Glasses Target	GT	4/5/6	GT4
Pixelight Shutterglasses Target	PGT	4/9	PGT4
Virtalis ActiveWorks 500	AWT	4	AWT4
Volfoni Active Eyes	AET	4/5/6/8/9/10/11	AET4
Volfoni EDGE (VR/RF models)	EGT	4/5/8	EGT4
Volfoni EDGE Multiview	EGmvT	4/5/9	EGmvT4
XPAND105	XP105T	4/5/6/9	XP105T

*further models on request

Target Overview
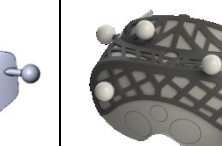
PASSIVE STANDARD TARGETS

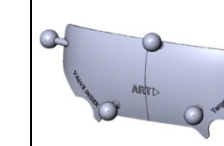| Hand target	Claw target	Large hand target	Tree target	Motion Capture Target Set
The hand target is designed for hands and elbows in usability / assembly studies. It is also frequently used as a small general-purpose target. E.g. HT23, HT25, HT26, HT27, HT29 through HT32 Markersize: 12 mm	The claw target looks just the same as the hand target, but comes in a bigger size and is equipped with bigger markers. E.g. CT11 through CT16 and CT21-24 Markersize: 16 mm	This hand target is designed for hand tracking in a two-camera tracking system. Its large size allows the user to make almost any movement with the hand without producing any occlusions. E.g. LHT1 and LHT2 Markersize: 12 mm	Originally designed for tracking HMDs, the tree target is a general-purpose target for tracking from longer distances (see picture below). It is equipped with 20 mm markers. E.g. TT1 through TT8 Markersize: 20 mm	The ART Motion Capture set allows the precise recording of body movements. The individual reflective markers have a tough plastic coating which makes them extremely resistant to the scratches and other minor damage that can be caused by rough working environments. Two bodies with Motion Capture sets can be tracked simultaneously.

HT23 · CT11 · LHT1 · TT1

TARGETS FOR HMDs

HMDs deliver a highly immersive mixed reality experience, especially in combination with ART optical tracking and LP Research Software. Increased accuracy and stability, no drifts and substantially reduced jitter offer an enhanced "close to reality" experience. HMDs are ideally suited for in-car tracking applications.
ART HMD targets for Varjo, XTAL, Valve, HTC Vive (Pro) and MetaQuest already exist. Any other geometry can be built on request.

ART Target for Varjo XR3 HMD	ART Target for XTAL3 HMD	ART Target for HTC Vive (Pro) HMD	ART Target for Valve Index 1 HMD	ART Target for MetaQuest Pro HMD

 Contents are subject to change without notice.

Target Overview

CUSTOMIZED TARGETS

In addition to our standard target collection, we specialize in creating non-standard targets customized to your specifications, varying in size or flash intensity, using passive or active markers. If you have special requirements regarding the target design, we can help by developing an appropriate rapid prototyping layout.

Target for Logitech Gamepad F710	Robust Passive Targets
As a special solution for gaming applications we designed a target for the Gamepad by Logitech. Of course it can be adapted to other Gamepad geometries.	To track objects (e.g. tools) in industrial environments, targets have to be robust. A target can be designed with passive (flat) markers or active LED diodes. A robust passive target uses laminated spherical markers. With the lamination the worker can touch it and it can be cleaned without damaging the reflection film. The geometry is bigger than an active target but no power supply is necessary.

SELF-MADE TARGETS

Self-made targets allow for the flexibility which developers and researchers need for testing purposes. Upon request ART provides the corresponding material for passive and active targets such as retro-reflective foil or electronics. If you want to build your own targets, you have to apply only a few simple rules:

- A target consists of at least 4 markers in a fixed constellation.
- The minimum marker distance within a target should exceed 4 cm for spherical 12mm markers (center to center) or 3.5 times marker diameter for other spherical markers.
- The distances of all two marker pairs in a target should differ by at least 3 mm. The same is valid from target to target. The geometry must not be symmetric.

ACTIVE TARGETS

Fingertracking	Robust active targets	AMC6 board and marker set
Our Fingertracking targets use small and robust active markers, allowing a compact design with higher wearing comfort than the gloves you typically find in VR setups.	An active target is designed individually for each customer and tool in order to make it perfectly fit to the geometry of the tool. The power supply can be directly sourced from the screwdriver. The target design ensures that it can be tracked in nearly every position.	Our AMC6 board with active markers is a DIY set for building your own active target. It can control up to 6 single LEDs, is powered by battery or USB, and is synchronized with the tracking cameras by wired or IR sync.

Contents are subject to change without notice.