Navigation Parameters

* Location (X- / Y- / Z-Axis) (Head-Gear)
* Location (X- / Y- / Z-Axis) (Hand-Controller)
* Camera Direction
* Camera Angle
* Speed
* Acceleration
* Deceleration
* Scaling
* Brightness / Darkness
* Sound of movement

Navigation Methods

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| --- | --- | --- | --- | --- | --- |
| Navigation Method | Description | Physical Translation | Physical Movement | Parameters | Difficulties |
| Walking | The user walks inside the given space. | Yes | Yes | * Location * Speed * Acceleration * Deceleration * Camera Direction | * Wall Collision |
| Walking in Place (WIP) | The user walks in place. | No | Yes | * Speed * Acceleration * Deceleration * Camera Direction | * Wall Collision * When does it start to walk? * Motion sickness |
| Scaled Walking | The user walks inside the given space. The physical translation in the VR-Space is scaled up. | Yes | Yes | * Location * Speed * Acceleration * Deceleration * Camera Direction * Scaling | * Wall collision * Motion sickness * Scale-rate |
| Dynamic Walking | The user walks like in scaled Walking. The intention of the user is detected. | Yes | Yes | * Location * Speed * Acceleration * Deceleration * Camera Direction * Scaling | * Wall collision * Motion sickness * Scale-rate |
| Auto-Walking | The user looks down at his feet and starts to walk. | No | No | * Speed * Acceleration * Deceleration * Scaling | * Wall collision * When does it start to walk? * When does it stop to walk? * Motion sickness * Scale-rate |
| Walking by Leaning | The user leans towards the direction he wants to walk.  (Segway) | No | Yes | * Location * Location (Head) * Speed * Acceleration * Deceleration * Scaling | * Wall collision * Detection of leaning * Motion sickness * Scale-rate |
| Walking by Button | The user walks by pressing a button. | No | No | * Speed * Acceleration * Deceleration * Scaling | * Wall collision * Motion sickness * Scale-rate |
| Gaze-Directed Teleporting  (Teleport by Blink) | The user looks to a point where he wants to teleport. He teleports by clicking a button. | No | No | * Location * Camera Direction * Speed of the Teleport | * Camera Direction after teleport (Wall Collision) * Camera Transition |
| Pointed Teleporting  (Teleport by Blink) | The user points towards a location he wants to teleport to. He teleports by clicking a button. | No | No | * Location * Camera Direction * Speed of the Teleport | * Camera Direction after teleport (Wall Collision) * Camera Transition |
| Room to Room Teleporting  (Teleport by Blink) | The user points towards a room he wants to teleport to. He teleports by clicking a button. The location inside the room is dependent of the current location inside the room | No | No | * Location * Camera Direction * Speed of the Teleport | * Combining with other methods (Walking, WIP, etc) * Camera Transition |
| Zoomed Teleport  (Teleport by zooming) | The User looks into the direction he wants to go. He teleports by clicking a button | No | No | * Location * Camera Direction * Speed of Zooming | * Camera Transition |
| Jumping | The user jumps in place. | Yes (Vertically) | Yes | * Location (Head) * Camera Direction * Scaling | * Mostly needs to be combined with another method (Walking, WIP, etc) |
| Climbing | The user climbs by using his hands to pull him upwards. | No | Yes | * Location (Hand) * Camera Direction * Scaling | * Mostly needs to be combined with another method (Walking, WIP, etc) |
| Flying (Plane-Style with Controllers as “Joysticks”) | The user flies by using his hands / Controllers to navigate horizontally and vertically | No | Yes | * Location * Camera Direction * Scaling * Speed * Acceleration * Deceleration | * Wall collision * Motion sickness * Scale-rate * When does it start to fly? |
| Flying ( | The user navigates in a 3D-Space by pressing buttons. | No | No | * Camera Direction * Acceleration * Deceleration * Speed / Scaling | * Wall collision (?) * Motion sickness |
| Guided Navigation | The user follows a given path and needs to adjust to given parameters by using his hands / controllers | No | Yes |  |  |