

TABLE I
SUMMARY OF EXPERIMENT #1: HAND GUIDANCE IN A STATIC VR SCENARIO

Subjects	20 (17 males, 2 females, 1 non-binary)	
Task	Matching as precisely as possible a quickly shown hand position and orientation	
Conditions	Positioning strategy HAND, TARGET, HAND-OFFSET, HAND-LINE, NO-HAPTICS Orienting strategy 2LINES, 1LINE, NO-HAPTICS	
Statistical analysis of the performances (ANOVA on a linear mixed model of the log of the data, $\alpha = 0.05$)		
	Positioning feedback	
	Effect of the strategy on the positioning error	$F = 30.623, p < 0.001$ (*)
	Effect of the strategy on the trial duration	$F = 153.838, p < 0.001$ (*)
	Orientating feedback	
	Effect of the strategy on the orienting error	$F = 0.4949, p = 0.6098$
	Effect of the strategy on the trial duration	$F = 213.367, p < 0.001$ (*)
Statistical analysis of the rankings (Friedman test, $\alpha = 0.05$)		
	Effect of the positioning strategy on the ranking	$F = 4.389, p = 0.004$ (*)
	Effect of the orienting strategy on the ranking	$F = 1.316, p = 0.251$
Post-hoc analysis of the performances (Tukey test on the log of the data, $\alpha = 0.05$)		
	Effect of the strategy on the positioning error	
	HAND vs. HAND-LINE	$p = 0.011$ (*)
	HAND vs. HAND-OFFSET	$p = 0.006$ (*)
	HAND vs. NO-HAPTICS	$p < 0.001$ (*)
	HAND vs. TARGET	$p = 0.742$
	HAND-LINE vs. HAND-OFFSET	$p < 0.001$ (*)
	HAND-LINE vs. NO-HAPTICS	$p = 0.008$ (*)
	HAND-LINE vs. TARGET	$p < 0.001$ (*)
	HAND-OFFSET vs. NO-HAPTICS	$p < 0.001$ (*)
	HAND-OFFSET vs. TARGET	$p = 0.176$
	NO-HAPTICS vs. TARGET	$p < 0.001$ (*)
	Effect of the positioning strategy on the trial duration	
	HAND vs. HAND-LINE	$p = 0.011$ (*)
	HAND vs. HAND-OFFSET	$p = 0.871$
	HAND vs. NO-HAPTICS	$p < 0.001$ (*)
	HAND vs. TARGET	$p = 0.991$
	HAND-LINE vs. HAND-OFFSET	$p < 0.001$ (*)
	HAND-LINE vs. NO-HAPTICS	$p < 0.001$ (*)
	HAND-LINE vs. TARGET	$p < 0.001$ (*)
	HAND-OFFSET vs. NO-HAPTICS	$p < 0.001$ (*)
	HAND-OFFSET vs. TARGET	$p = 0.617$
	NO-HAPTICS vs. TARGET	$p < 0.001$ (*)
	Effect of the orienting strategy on the trial duration	
	1LINE vs. 2LINES	$p < 0.001$ (*)
	1LINE vs. NO-HAPTICS	$p < 0.001$ (*)
	2LINES vs. NO-HAPTICS	$p < 0.001$ (*)
Post-hoc analysis of the rankings (pairwise Wilcoxon test on the data, $\alpha = 0.05$)		
	Effect of the positioning strategy on the user's ranking	
	HAND vs. HAND-LINE	$p = 0.563$
	HAND vs. HAND-OFFSET	$p < 0.001$ (*)
	HAND vs. TARGET	$p = 0.83$
	HAND-LINE vs. HAND-OFFSET	$p = 0.07$
	HAND-LINE vs. TARGET	$p = 0.563$
	HAND-OFFSET vs. TARGET	$p = 0.004$ (*)

TABLE II
SUMMARY OF EXPERIMENT #2: HAND GUIDANCE IN A DYNAMIC VR SCENARIO

Subjects	8 (7 males, 1 female)	
Task	Intercept a moving ball (positioning) or make it bounce towards a given direction (orientation)	
Conditions	Positioning strategy HAND-OFFSET, NO-HAPTICS Orienting strategy 1LINE, NO-HAPTICS	
Statistical analysis (Wilcoxon test on paired data, $\alpha = 0.05$)		
	Difference in task difficulty	$V = 0, p = 0.012$ (*)
Statistical analysis (ANOVA on a linear mixed model of the log of the data, $\alpha = 0.05$)		
	Positioning task	
	Effect of the feedback on the positioning error	$F = 0.04, p = 0.841$
	Effect of the feedback on the trial duration	$F = 2.247, p = 0.134$
	Effect of the ball travel time on the positioning error	$F = 0.253, p = 0.776$
	Orientating feedback	
	Effect of the feedback on the orienting error	$F = 26.102, p < 0.001$ (*)
	Effect of the feedback on the trial duration	$F = 10.94, p < 0.001$ (*)
	Effect of the ball travel time on the orienting error	$F = 11.362, p < 0.001$ (*)