QoE Assessment of Fairness between Players in Networked Game with Olfaction
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Introduction
- In a networked game with olfaction, the times it takes for a smell to reach players may be different from each other owing to the network delay and delay jitter.
- The time also depends on the distance between each player and an olfactory display.

Problem
When players need to respond to smells, the fairness between players may be seriously damaged.

Fruit Harvesting Game

Assessment Method
- We set the distance between each player and SyP@D2 to 0.30 m, and the average time it takes for a smell to reach the player is 2.02 seconds (the coefficient of variation of the time is 0.23).
- We change the time it takes for a smell to reach players by generating constant delays (constant delays 1 and 2) at the terminals.
- Each subject is asked to base his/her judgment about the fairness in terms of wording used to define the five-grade quality scale (5: Fair, 4: Rather fair, 3: Neither fair nor unfair, 2: Rather unfair, 1: Unfair).
- Subjects are 30 persons whose ages are between 21 and 30.

Assessment Results

Conclusion and Future Work
- We investigated the influence of the time it takes for a smell to reach a player on the fairness between players in a networked fruit harvesting game by QoE (Quality of Experience) assessment. As a result, we illustrated that the fairness is hardly damaged when the time is smaller than about 500 ms.
- We will investigate the influences of packet loss and network delay jitter by QoE assessment.