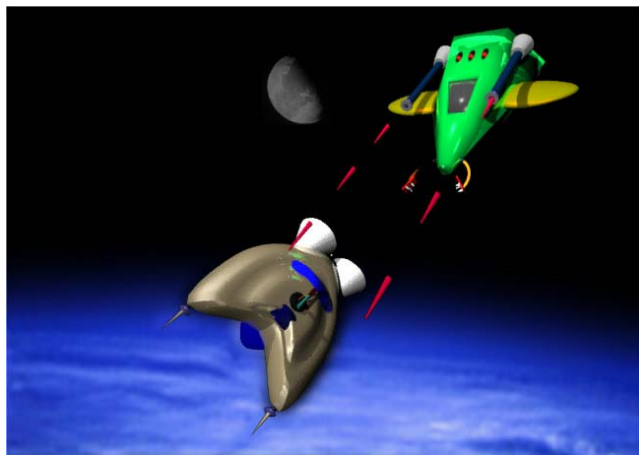


**Lab\* “P2Pilot: A Peer-to-Peer Variant of XPilot” (4-6 People)**

Multiplayer network games (MNGs) are enormously popular. Currently most MNGs are based on a client/server architecture. A single server maintains the game status and provides a consistent view to all participating clients. Obviously, if the server fails, the game is over.

Peer-to-peer computing is the sharing of computer resources and services by direct exchange between client systems (peers). Following this approach there is no central server. All participating peers are responsible for maintaining connectivity and consistency and for ensuring fault-tolerance. Thus, if a peer fails, life goes on.



In this lab you will develop a peer-to-peer variant of the XPilot game (P2Pilot). As a pilot you will resist gravity and shoot your best friends' space vehicle, while flying through screens *glued* together and maintained by all participants simultaneously. Besides the – maybe well-known – graphical interface, there are several problems to be solved below the surface. Since P2Pilot is an action game, a good architecture has to provide efficient routing of messages in real-time. Even if multiple hosts fail concurrently, the other players shouldn't be affected.

**References:**

- [www.xpilot.org](http://www.xpilot.org)

**Skills**

- Network programming (preferably with Java)

**Contacts**

- Keno Albrecht, [keno.albrecht@inf.ethz.ch](mailto:keno.albrecht@inf.ethz.ch), IFW A46.2, phone 20896
- Roger Wattenhofer, [wattenhofer@inf.ethz.ch](mailto:wattenhofer@inf.ethz.ch), IFW A47.2, phone 26312

---

\* For the new Major in Distributed Systems students have to complete one of our lab projects.