In Journal of robotics and Autonomous Systems 1999

Convoying: Using Chorusing to Form

Travelling Groups of Minimal Agents

Chris Melhuish, Owen Holland, and Steve Hoddell

Intelligent Autonomous Systems Engineering Laboratory

Faculty of Engineering

University of the West of England

Bristol BS16 1QY

United Kingdom

Abstract

We have previously used a biologically-inspired chorusing mechanism to control group size

in an environment containing many simulated minimal agents. We now modify the technique

to produce travelling groups of a particular size (convoys). An agent in a group of the desired

size enters a primed state, emits a signal after a delay, and at the end of the signal moves off

to the next destination; other agents in the neighbourhood which are in the primed state and

detect the signal also move off at the same time, forming a group. Several such travelling

groups in succession can be produced.

KEYWORDS: MINIMAL AGENTS; BIOLOGICAL INSPIRATION; TRAVELLING

GROUPS; CHORUSING MECHANISM

1