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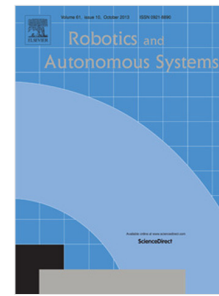
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## Designing a socially integrated mobile robot for ethological research<sup>☆</sup>

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### Abstract

A robot introduced into an animal group, accepted by the animals as conspecifics, and capable of interacting with them is an efficient tool for ethological research, particularly in studies of collective and social behaviour. In this paper, we present the implementation of an autonomous mobile robot developed by the authors to study group behaviour of chicks of the domestic chicken (*Gallus gallus domesticus*). We discuss the design of the robot and of the experimental framework that we built to run animal-robot experiments. The robot design was experimentally validated, we demonstrated that the robot can be socially integrated into animal groups. The designed system extends the current state of the art in the field of animal-robot interaction in general and the birds study in particular by combining such advantages as (1) the robot being a part of the group, (2) the possibility of mixed multi-robot, multi-animal groups, and (3) close-loop control of robots. It opens new opportunities in the study of be-

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