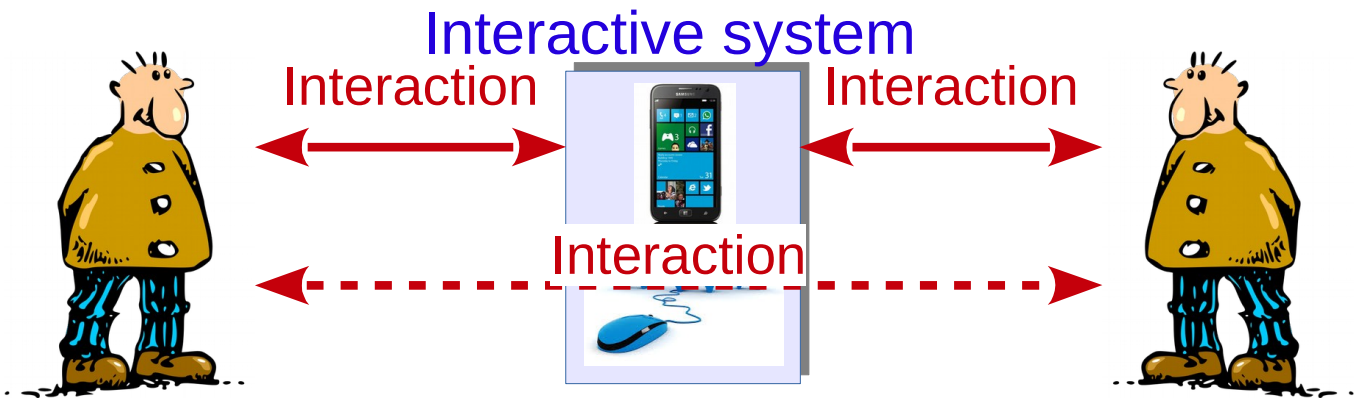
Advanced Human-Machine Interaction
Interaction Data Analysis
Introduction

Alexandre Pauchet
BO.B.RC.18, alexandre.pauchet@insa-rouen.fr

INSA Rouen Normandie - ISIA departement

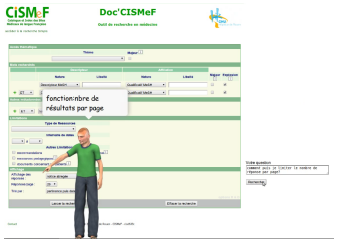
What does HMI mean?



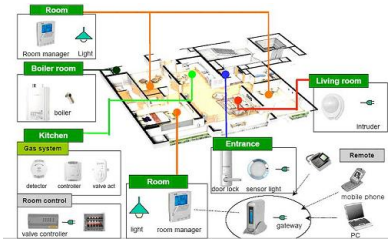


HMI: Human-Machine Interface / Interaction

Human-Machine Interaction and Complex Systems





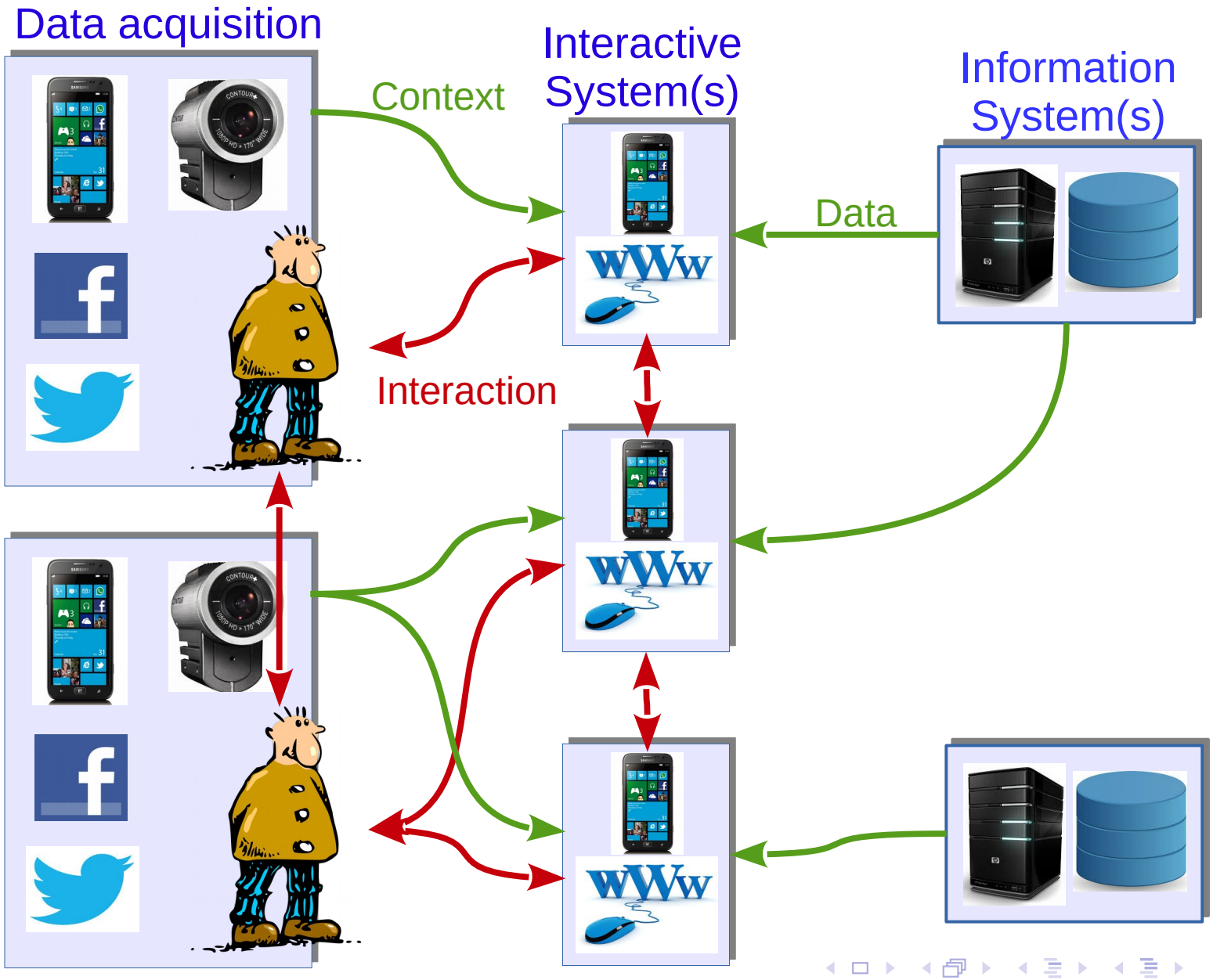


- Why can interaction become complex?
  - **Multiple interaction modalities**
    speech, text, gestures, actions, ...
  - **Multiple sources of data**
    text, audio, video, sensors, ...
  - **Adaptation**
    to users, groups and contexts
- Interactive systems may also involve
  - different types of interactive entities,
  - several interacting agents,
  - heterogeneous capabilities and behaviours.

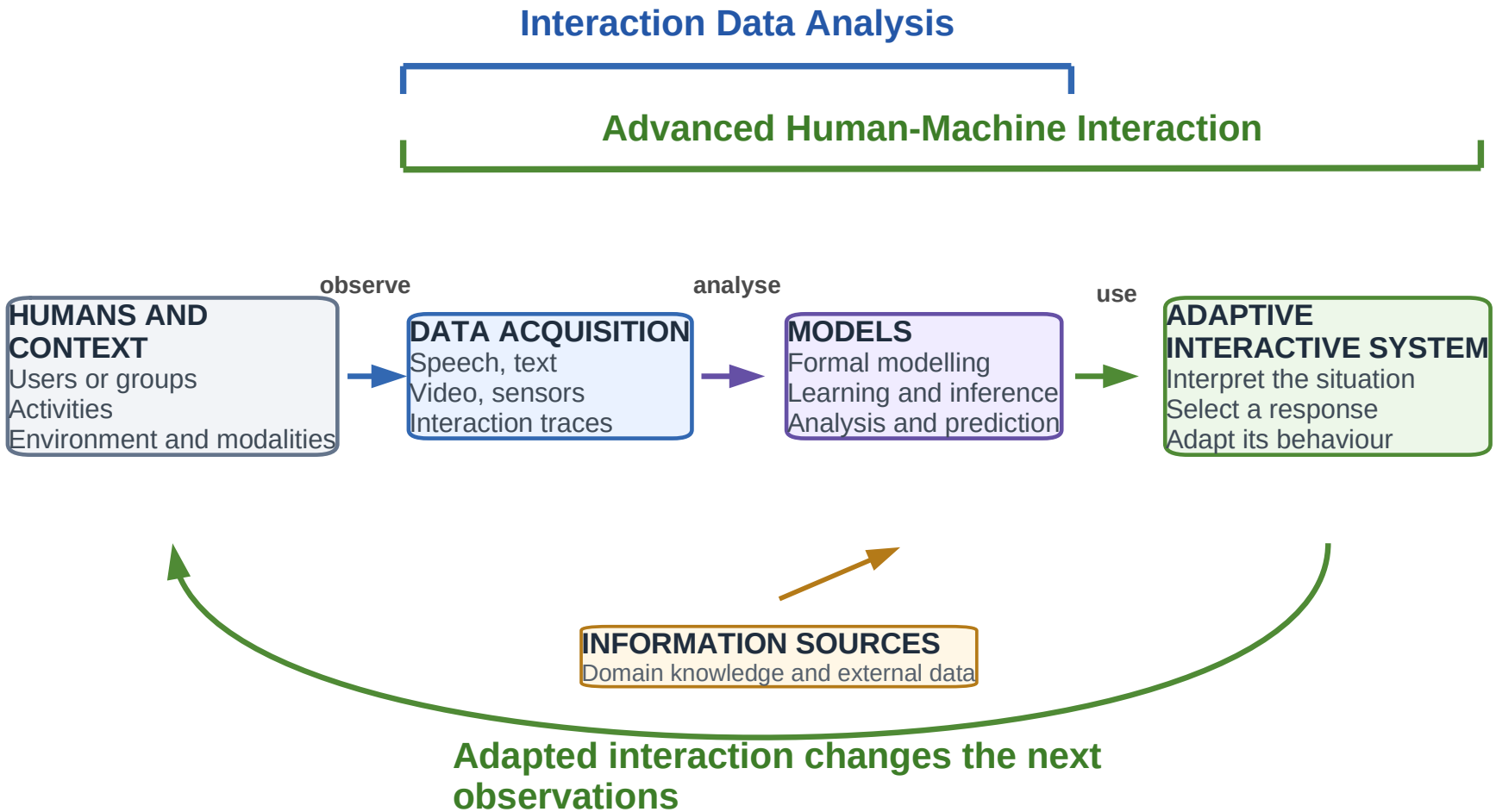
Examples

A smart building involving several users, robots, virtual agents and connected devices.

Purpose and goals of IDA and AHMI



Purpose and goals of IDA and AHMI



Formal models and learned models support the same cycle: observe, interpret, act, and observe again.

Plan

Interaction Data Analysis / Advanced Human-Machine Interaction

- Introduction + Automata
- Mining and learning interaction data (x2)
- Textual interaction analysis
- Social Network Analysis
- Multiagent Systems (x2)
- Exam

Advanced Human-Machine Interaction

- Embodied Conversational Agents (x2)
- Affective Computing (x2)
- Personalized Information Retrieval
- Defense of projects

Goal

- Introduction to Research
- Process (interaction) data
- Formalize and solve a problem

AHMI	Exam (1/3) + bibliographical survey (1/3) + Project (1/3)
IDA	Exam (2/3) + bibliographical survey (1/3)
PAO	bibliographical survey (1/3) + Project (2/3)

- Projects: X proposals, teams of 2-4 students
- Survey: X proposals, 1-3 by topic, 2 articles provided as starting point. 2 pages (double column) or 3 pages, $\sim 10 - 30$ articles.