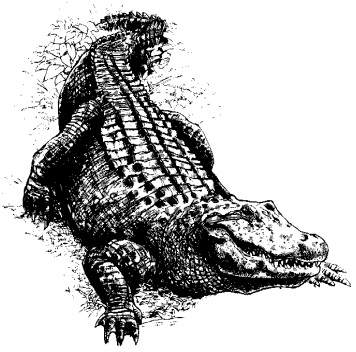


SALT

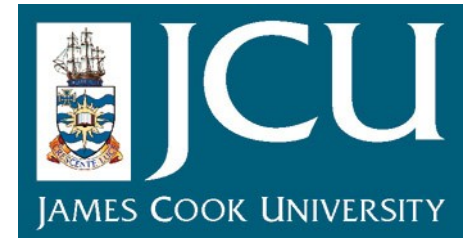
# Sensor Abstraction Layer – Transmission

06/11/2008

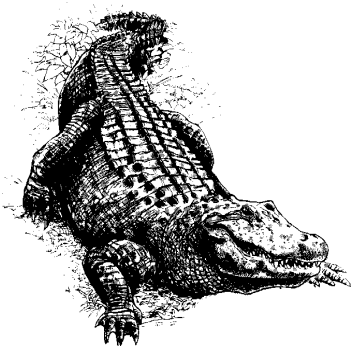
Jochen Braun, Andreas Knirsch, Andreas Seemann



# Agenda



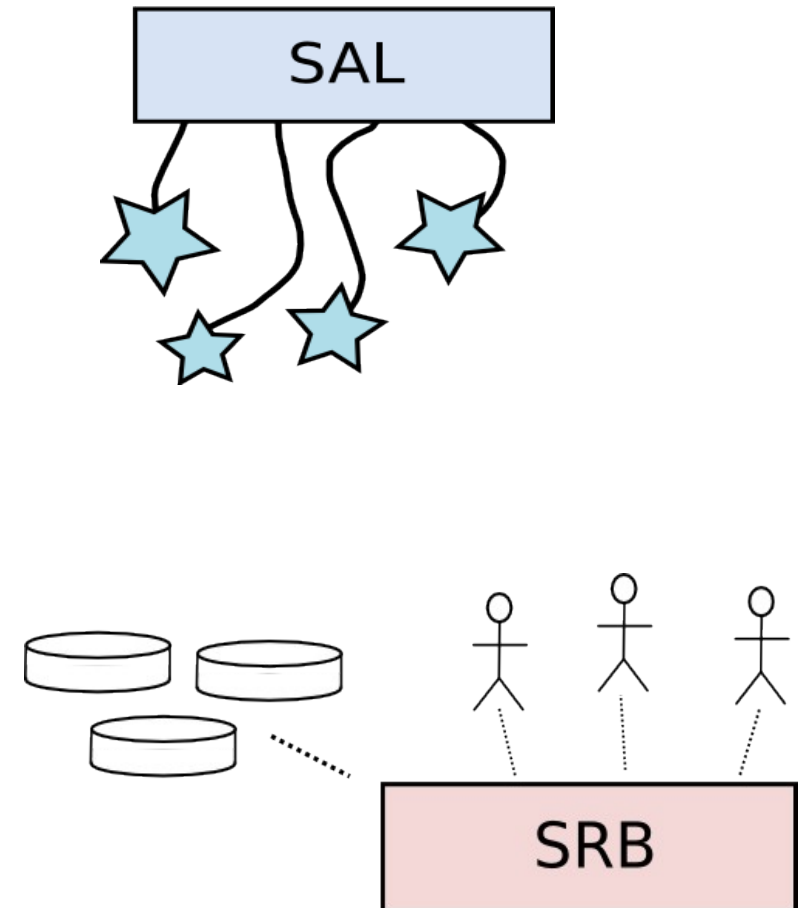
- Project outline
- Developed system
- Challenges during the project
- Limitations of the developed system

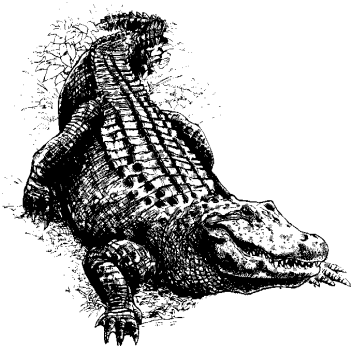


# Project outline

## – Before –

- We have
  - heaps of sensor data
  - a large database
- We don't have
  - a connection between the two

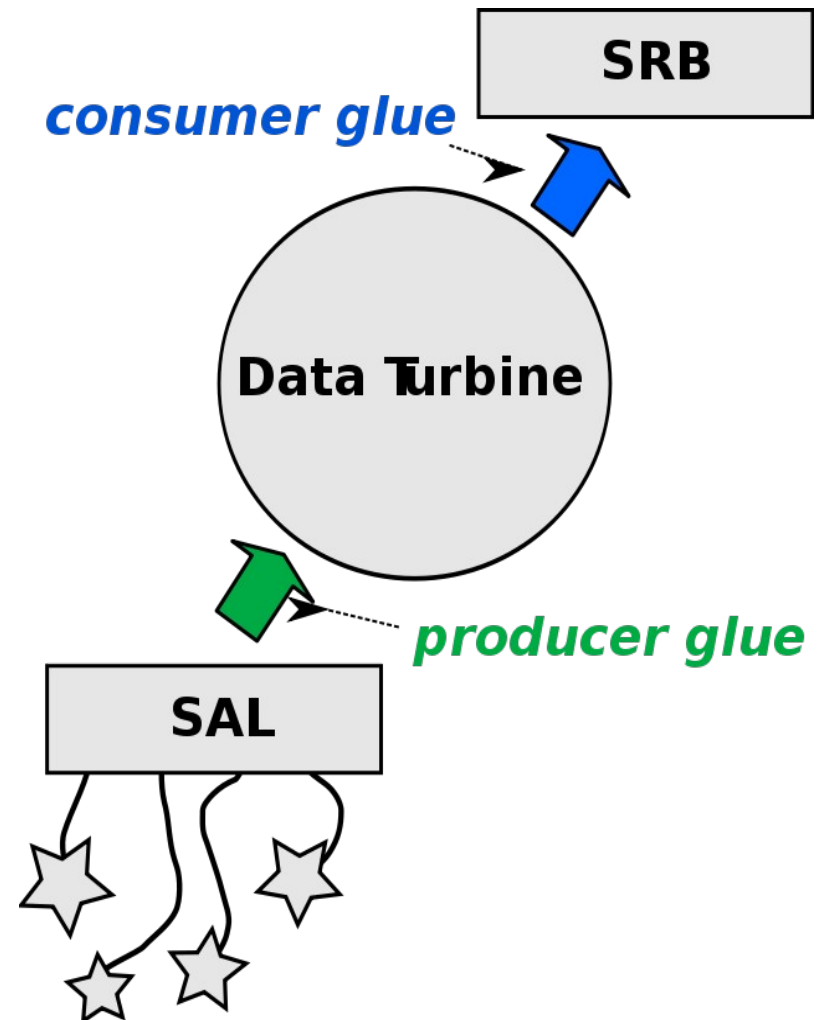




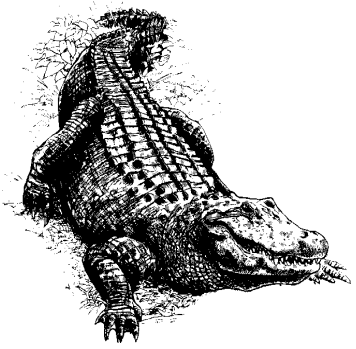
# Project outline

## – After –

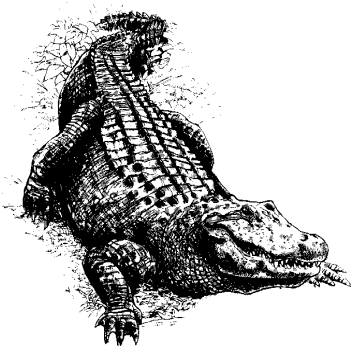
- Data Turbine as new middleware
- Connectors
  - Between SAL and Data Turbine to buffer sensor data
  - Between Data Turbine and SRB to store sensor and meta data



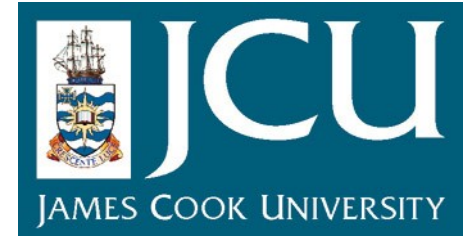
# Newly developed – Sensor glue –



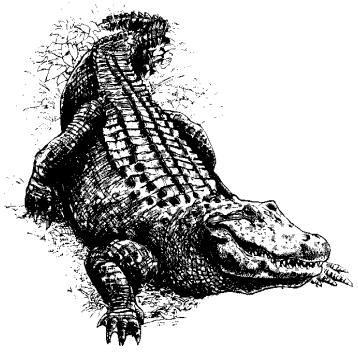
- Configuration file
- Encapsulation of SAL information in „Transmittable“ objects
- „Transmittable“ objects as standard communication through Data Turbine
- One thread for each sensor type
- One channel for each sensor type



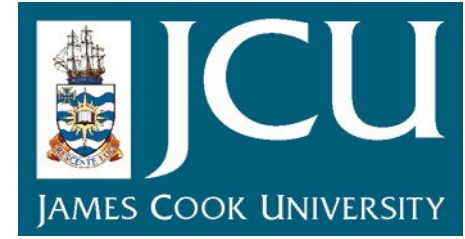
# Newly developed – Consumer glue –



- Configuration file
- Reads „Transmittable“ objects from Data Turbine
- Stores object payload as files in SRB using Jargon
- Can be used for text and graphical data
- One thread for each sensor type

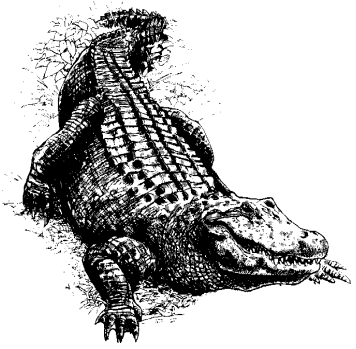


# Challenges during the project



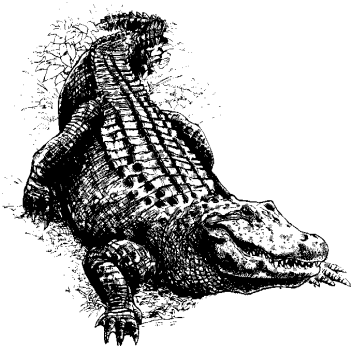
- Understand Data Turbine
  - Cloned sample program using simple text data
  - Tested various configuration options
- Polling different sensor types differently
  - Introduced multithreading
- Reading multiple channels (Data Turbine Bug)
  - We had to set up a sink for every channel

# Limitations of the developed system



- Broken connections are not fixed at runtime (no reconnects)
- No refreshing of hot-plugged sensors
  - Can be added by using callback methods of SAL
- System was limited to 1000 simultaneous channels inside the test environment





# Thank you