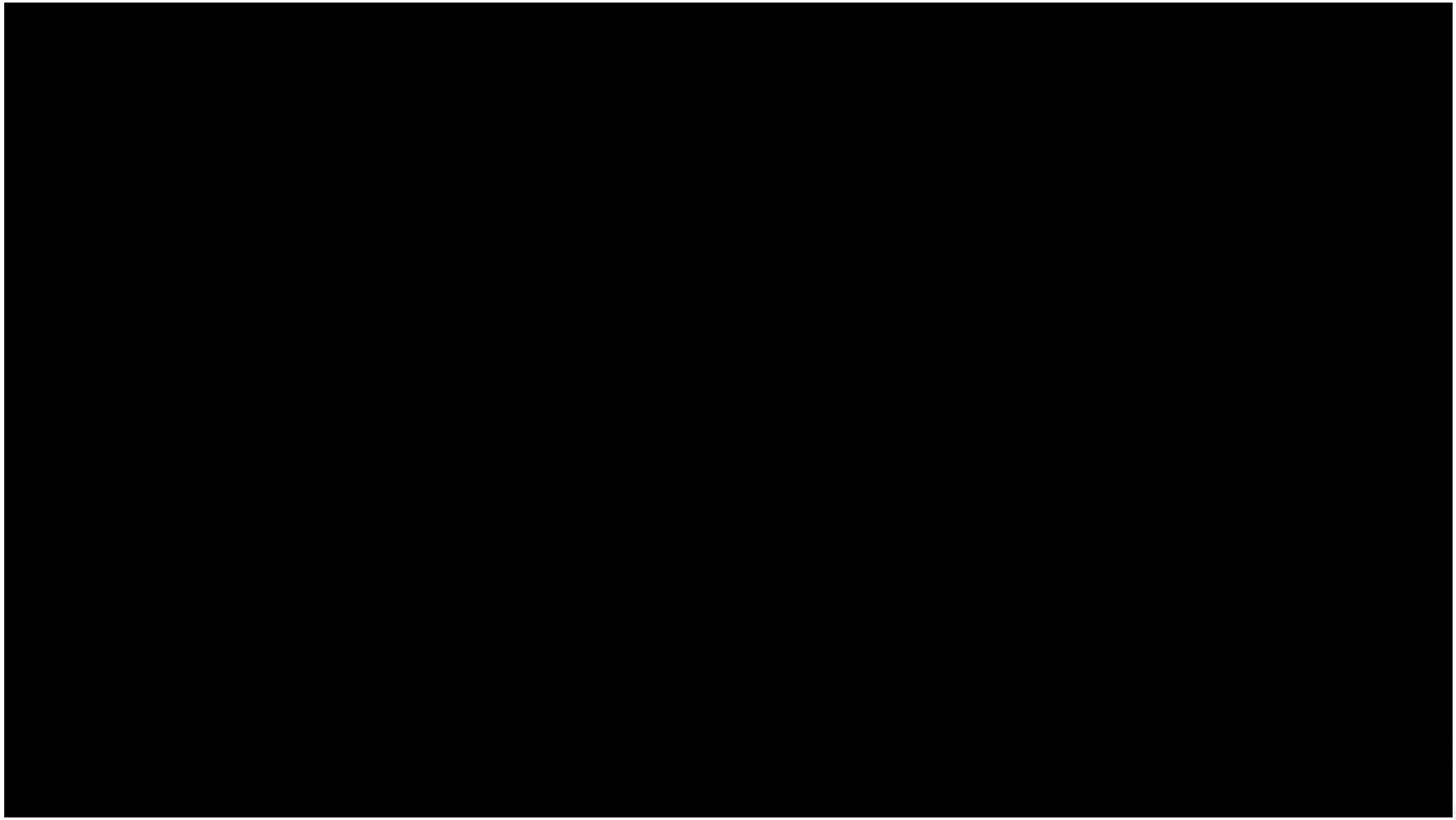
Info Day ECHORD – 23/02/2010 – LAAS, Toulouse

Rodolphe GELIN

Nao: what is it about?



The Aldebaran Project

Mission

Create and deliver affordable autonomous

and easily programmable humanoid robots.

Time-to-Market

Convergence between project, market, costs and availability of technologies.

About Aldebaran Robotics

Financial

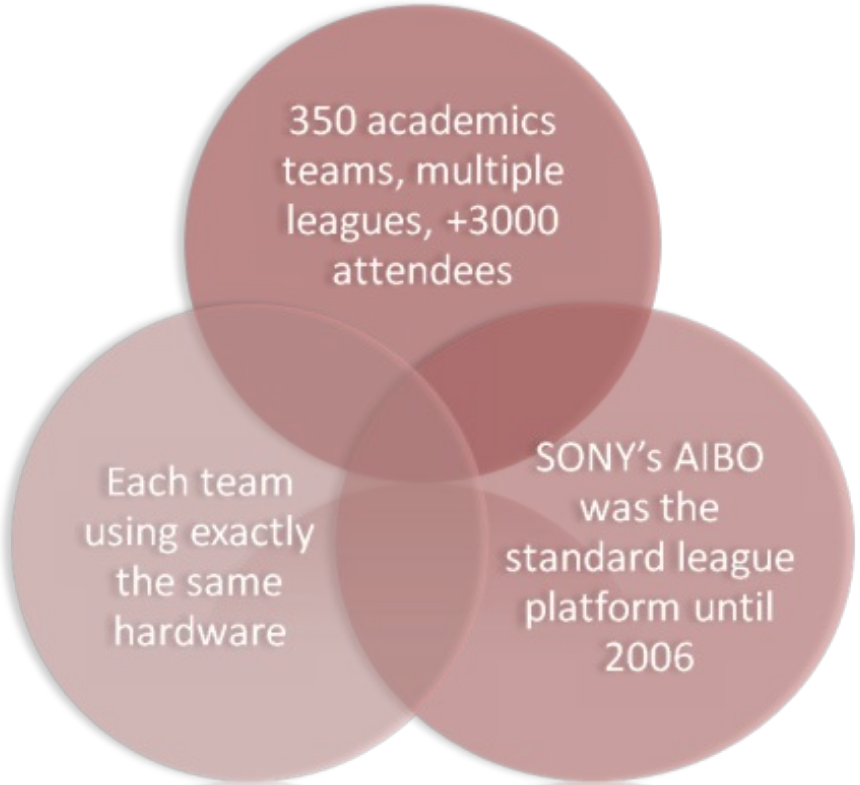
- 4 M€ Equity
- 4 M€ Public grant and subsidies
- A total of **15 000** R&D days
- 5 M€ fund raised end of 2007
- 85 employees

Key support

- Aldebaran Robotics is member of several research consortiums in France or funded by the EC (i.e Feelix Growing, ROMEO, GVLeX…)
- New robotics cluster launched in France around Aldebaran Robotics with support of government: CAP ROBOTIQUE

Aldebaran Robotics relies on strong financial resources and a large network of academic partners.

RoboCup standard platform



25 teams from 18 countries
used Nao during RoboCup 2009 in Austria

The RoboCup

Nao Academics Edition

2 Loudspeakers
4 Microphones

Head tactil sensor

GEODE 500 Mhz CPU.
512 Mo Flash
USB Extension
WIFI 802.11 G

2 VGA CMOS Camera
640*480
15 to 30 FPS

25 DOF
Proprietary actuators using
25V coreless motors
Reprogrammable dsPIC
microcontrollers
Hall effect sensors: position +
motorshaft.

Torque : 6 Nm

Interaction: text to speech, picture reco, voice reco and much more

Prehensive hands

Multi sensored:
Inertial Center (3 Gyros, 3 Acceleros)
Ultra-Sound Sensors

LiPo 90 min batteries

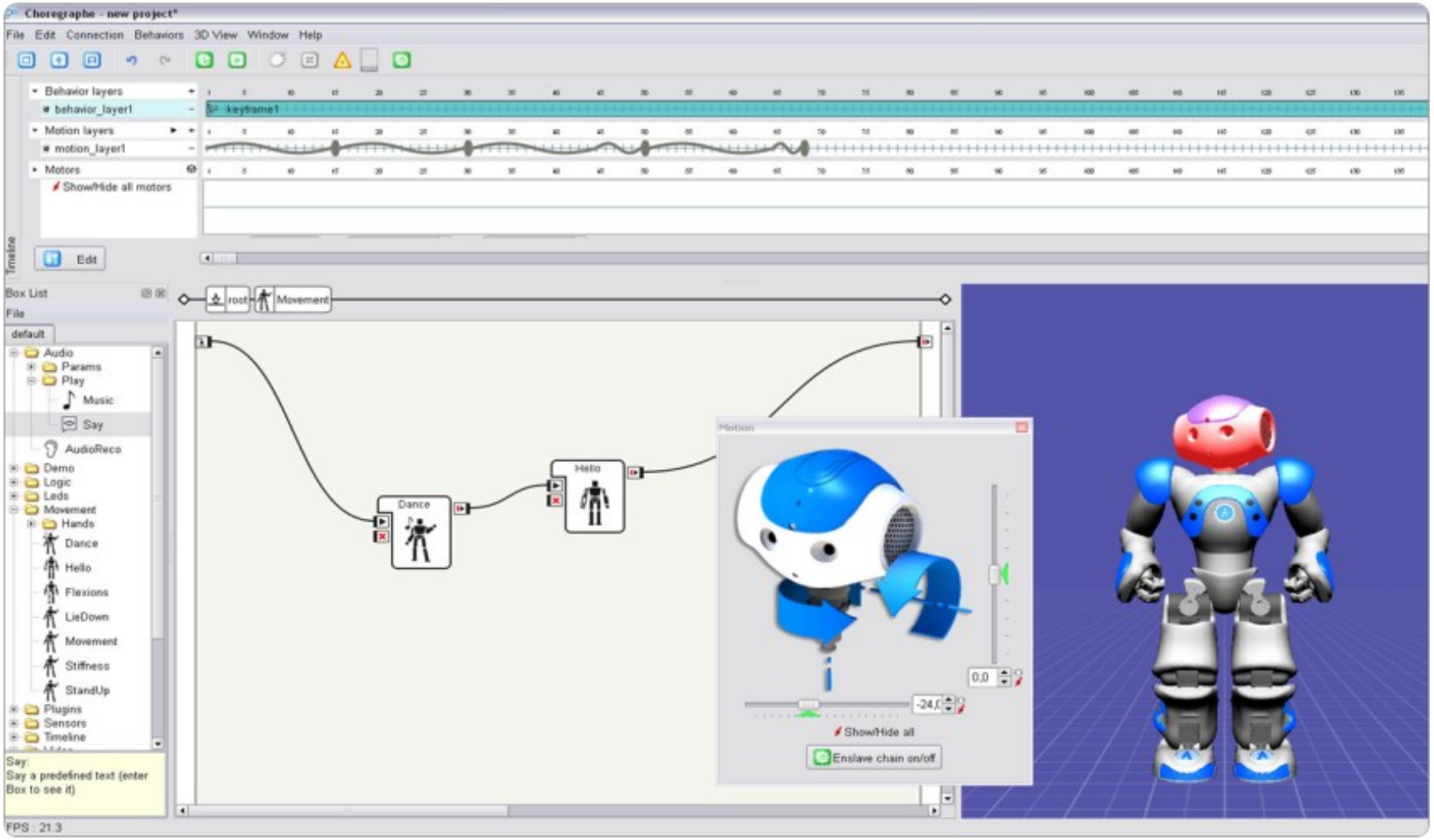
Bumpers

8 FSR sensors

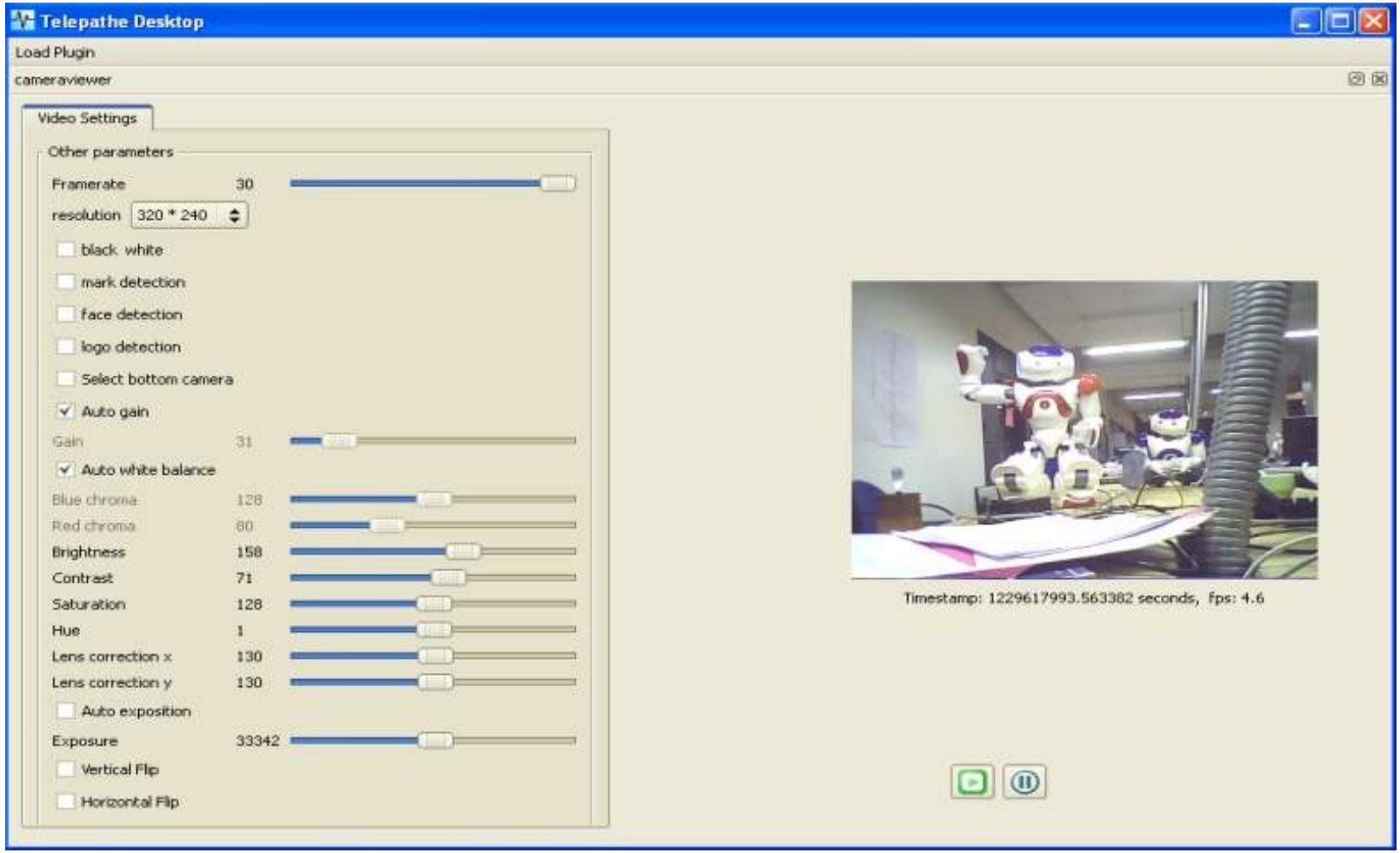
Nao Academics Edition comes along with many options and software.

Controling Nao's platform

choregraphe



Telepathe



The easiest way to see what Nao sees...

Who is already using Nao?

- Lockeed Martin
- KAIST
- University of Maastricht
- Xiamen University
- INRIA Orsay
- University of Wales
- National Institute of Astrophysics
- Bar Ilan University
- and many more...

More than 400 robots sold all over the world

RoboCup 09 standard league:

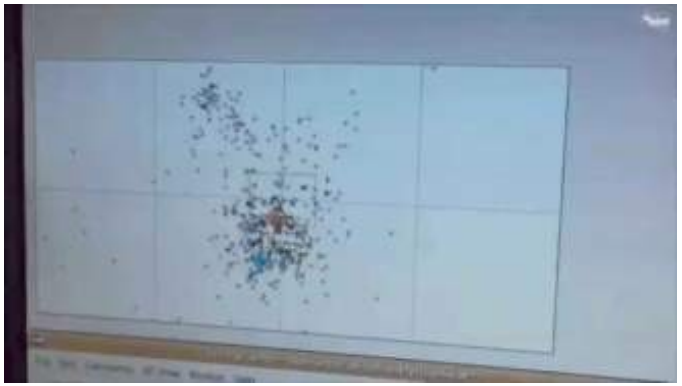
Carnegie Mellon, University of Pennsylvania, Bowdoin College, Austin Villa Texas, University of New South Wales, Humbolt Berlin, Dortmund, Bremen, Aachen, Technical University of Greece, Bogazici University of Turkey, University of Murcia, NUI MayNooth Ireland, University of Chile, Faculty of Engineering at University of Rome...

And now let’s do science

Genetic algorithm

Inertial sensor

Stiffness & haptics



Particles filter

Our involvement in cooperative projects

Feelix Growing (UK, Greece, Switzerland, France)

FEEL, Interact, eXpress: interdisciplinary investigation of socially situated development from an integrated or global perspective as a key paradigm towards achieving robots that interact with humans in their everyday environments in a rich, flexible, autonomous and user-centered way.
http://www.feelix-growing.org/

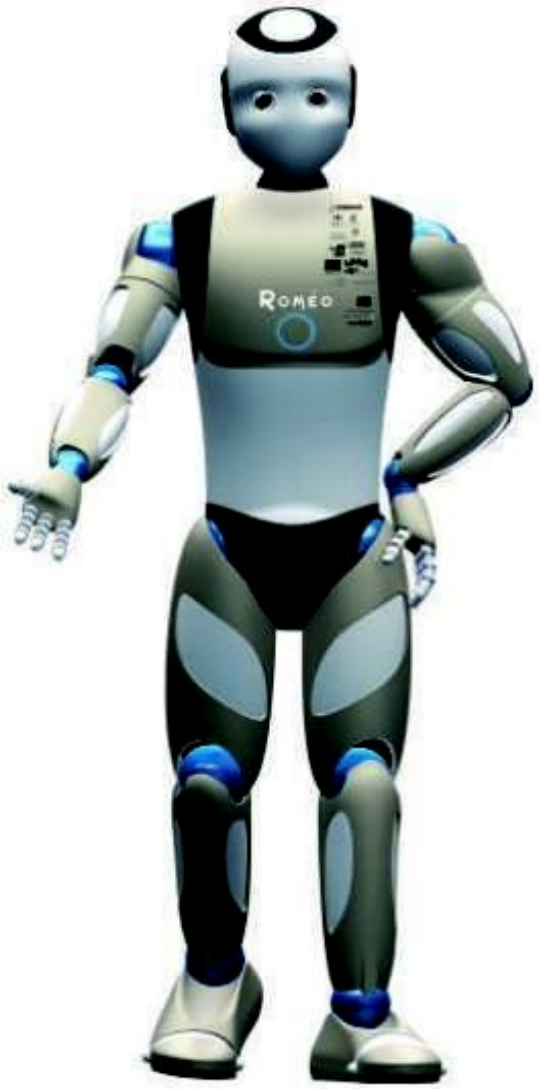
ROMEO (France) Robot Companion & Personal Assistant

Conception and development of a humanoid robot of bigger proportions based on advanced physique and electronic platform, with elementary perception, fondamental capacities and integrating an advanced dialogue, cognition and interaction systems.

GVLeX (France) Expressive reading for artificial agents

Based on learning from corpus of expressive reading (recordings of professional actors' reading) and automatic semantic analysis of tales for children, the robot or
the avatar is able to read, in an expressive way, 15 minutes long stories. Expression will be carried out by voice and gestures.

Introducing ROMEO



ALDEBARAN Robotics

acapela

SPIROPS

VOXLER

LISV

TELECOM ParisTech

List

INRIA

LMS

LAAS

LPPA

INSTITUT DE LA VISION

cap·digital Paris Region

dgcis

direction générale de la compétitivité de l'industrie et des services

îledeFrance

MAIRIE DE PARIS

Our ECHORD proposals

ISAR with Bielefeld University (G)

Laser Head for Intrinsically Safe Robot

GRASPY with DFKI (G)

Stereo-vision head and force control for smart manipulation

BABIR with Vocally (FR)

A better Audition for a Better Interaction

ECHORD Kit (to be confirmed)

What is included?

Multi-platform Software Suite:

- Choregraphe
- NaoQi SDK
- Telepathe
- Documentation

Battery and charger with local adaptor

NaoQi Spare USB Key

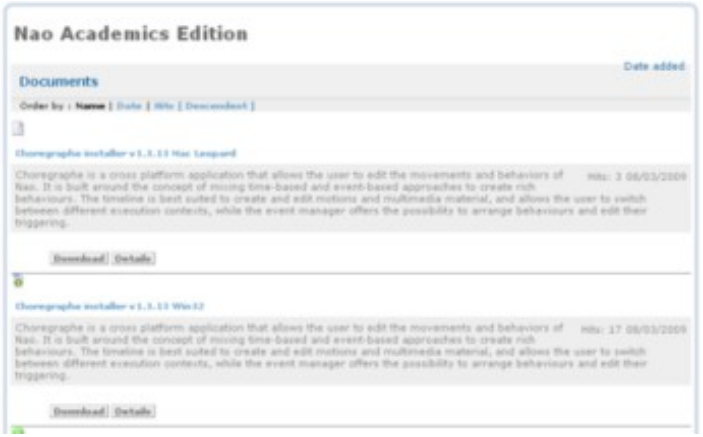
Nao with 3 year of guarantee

Possible options

- Laser head
- Stereovision head
- 1 day training

Online Community

A dedicated website: http://academics.aldebaran-robotics.com



Download Center for software updates

Online Documentation

A dedicated forum:

- Community: be in touch with other Nao owners
- Support: talk with the Aldebaran Robotics Support and R&D teams

Thank you!

...and see you soon