Pepper, the humanoid robot

Christof Luyten

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Summary

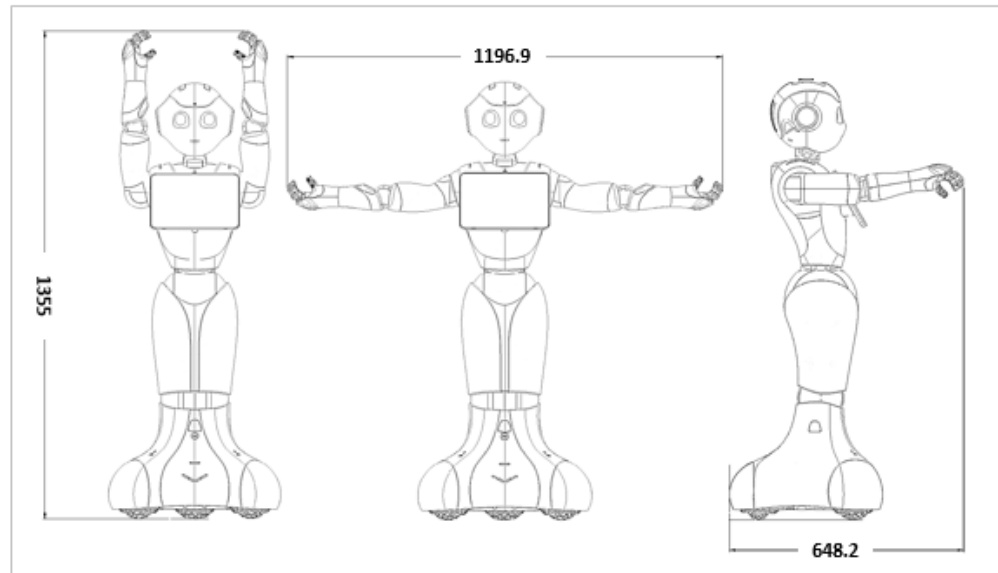# 01

Technical overview

Humanoid robot

› **Softbank Robotics**
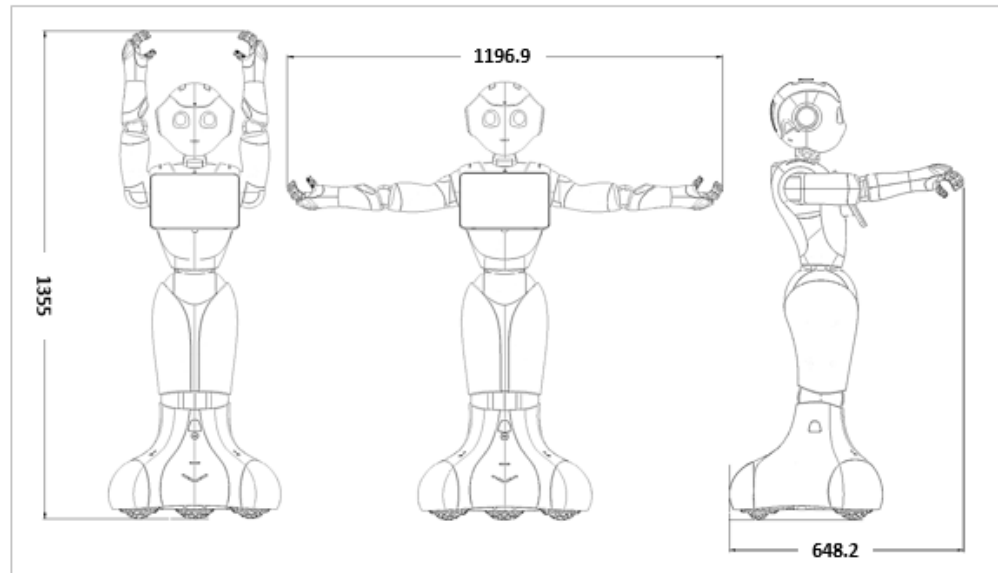› **«Pepper is a human-shaped robot, kind, endearing and surprising»**

Hardware

› **Atom E3845 processor, 4GB RAM**

› **Battery life: 12 hours, power hatch**

› **Internet connectivity**

› **Inertial unit: gyrometer, accelerometer**

› **MRE: Magnetic Rotary Encoders**

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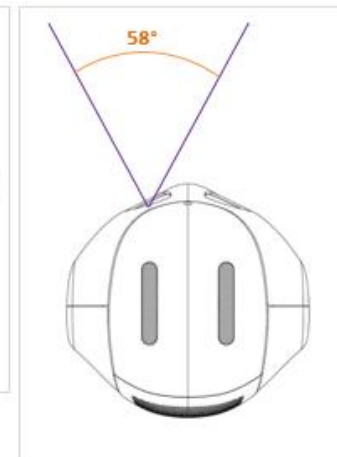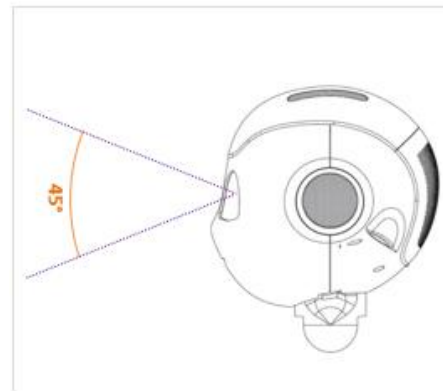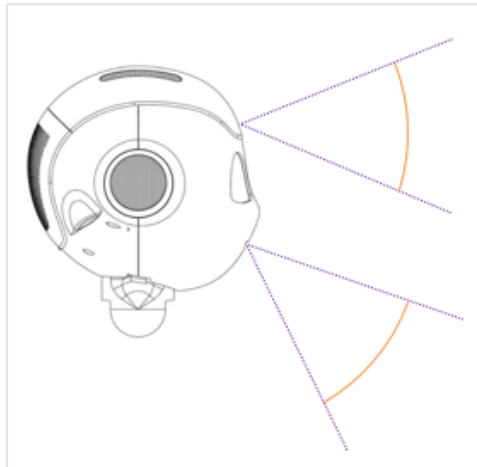› **MRE: Magnetic Rotary Encoders**

› **Tablet**

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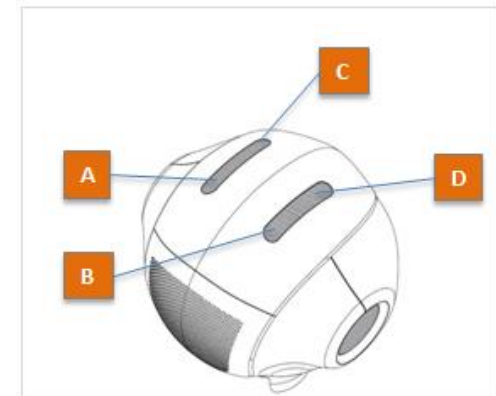› **Inertial unit: gyrometer, accelerometer**

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› **Tablet**

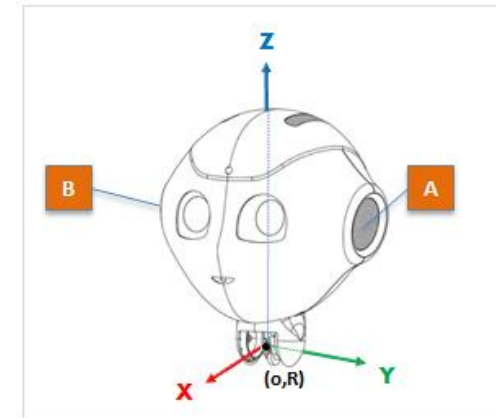› **Loudspeakers, microphones, cameras**

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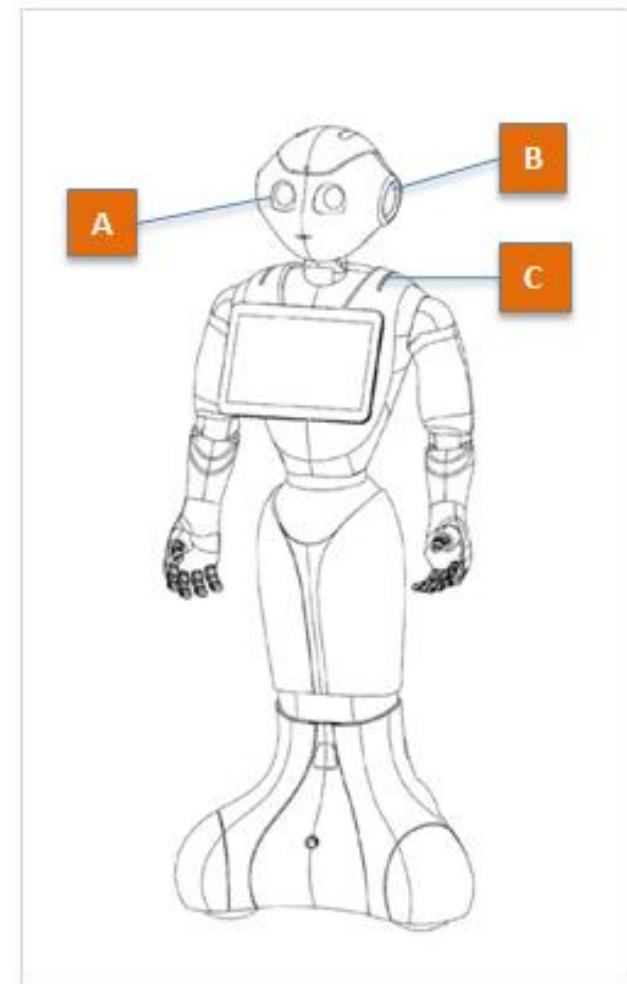› **Loudspeakers, microphones, cameras**

› **LEDs**

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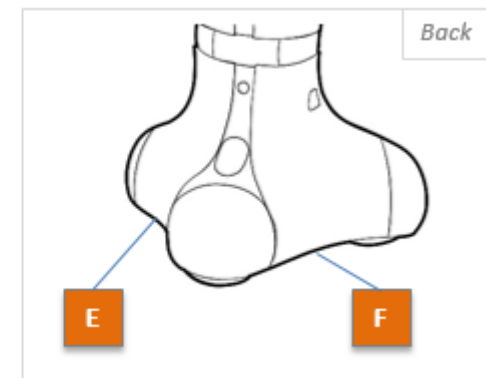› **Loudspeakers, microphones, cameras**

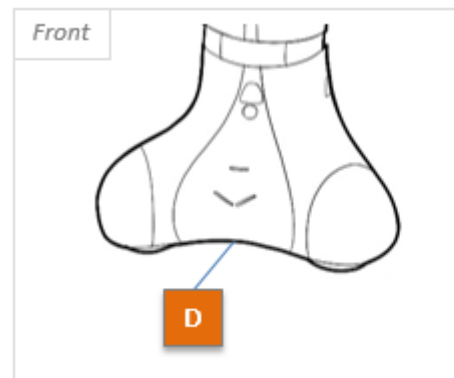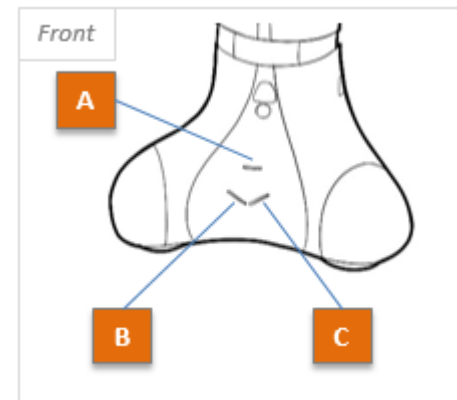› **LEDs**

› **Laser**

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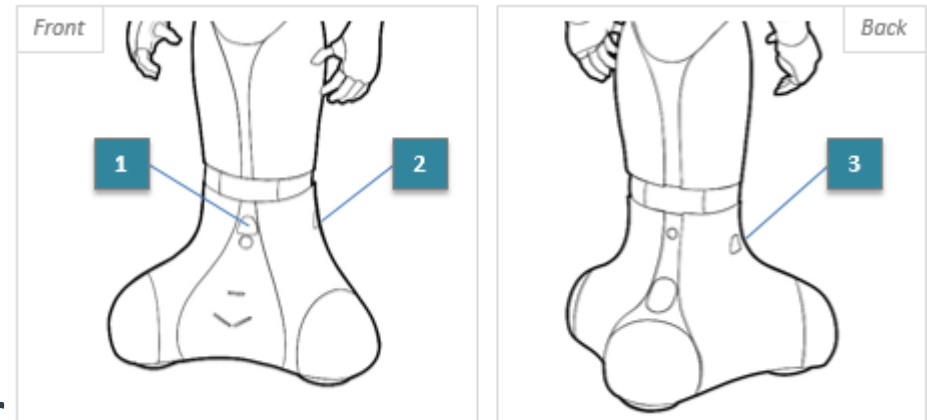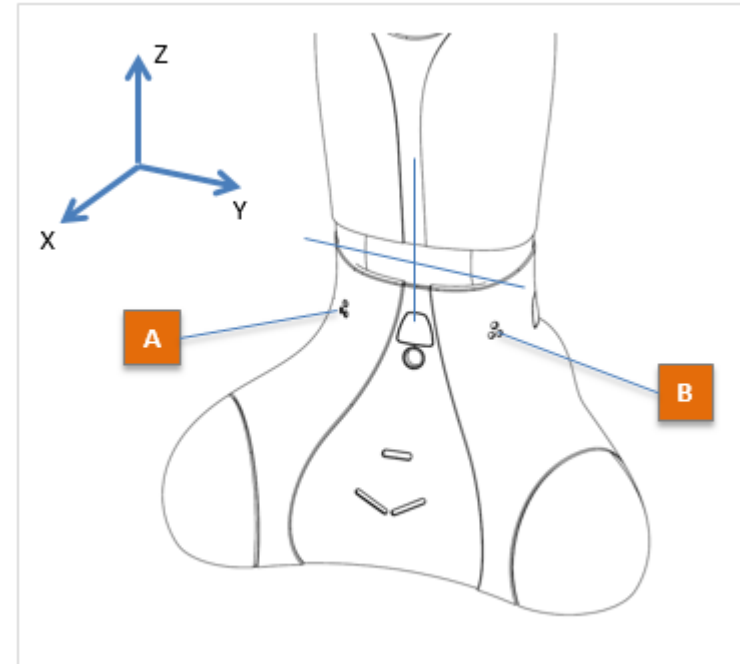› **LEDs**

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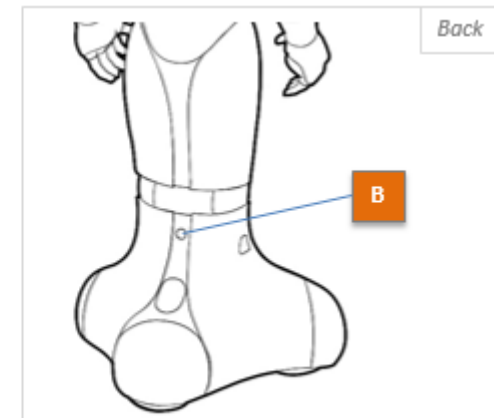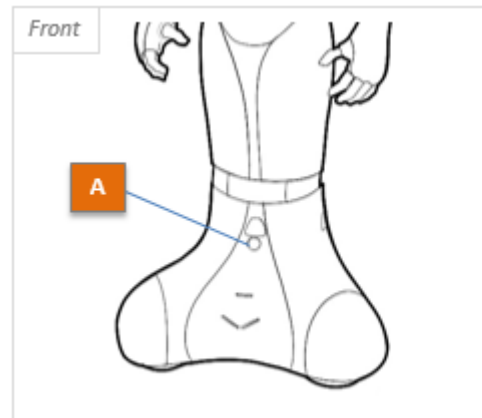› **Infra-red**

› **Sonar sensors**

Hardware

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› **Tablet**

› **Loudspeakers, microphones, cameras**

› **LEDs**

› **Laser**

› **Infra-red**

› **Sonar sensors**

› **Motors**

HeadYaw
HeadPitch
ShoulderPitch
ShoulderRoll
ElbowYaw
ElbowRoll
WristYaw
Hand
HipRoll
HipPitch
KneePitch
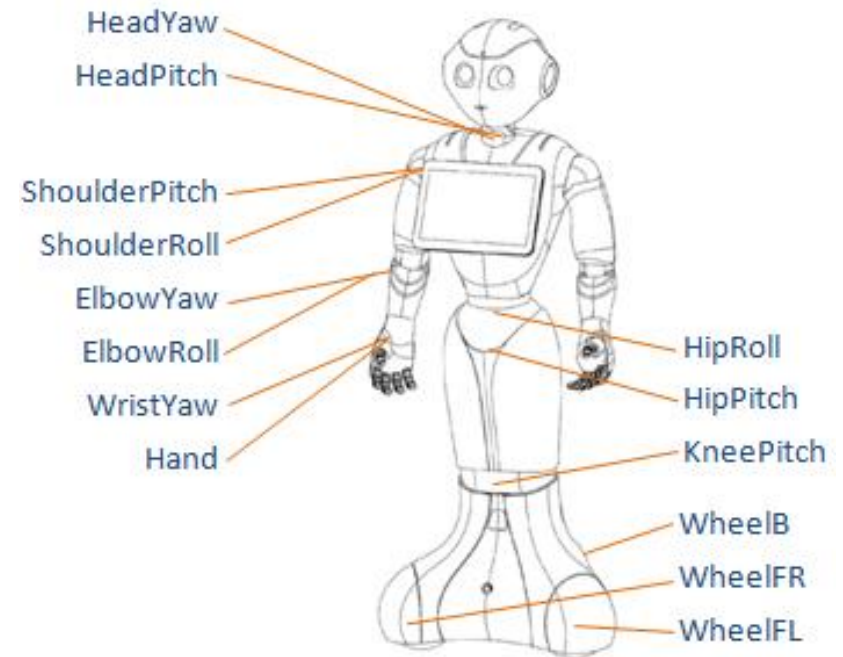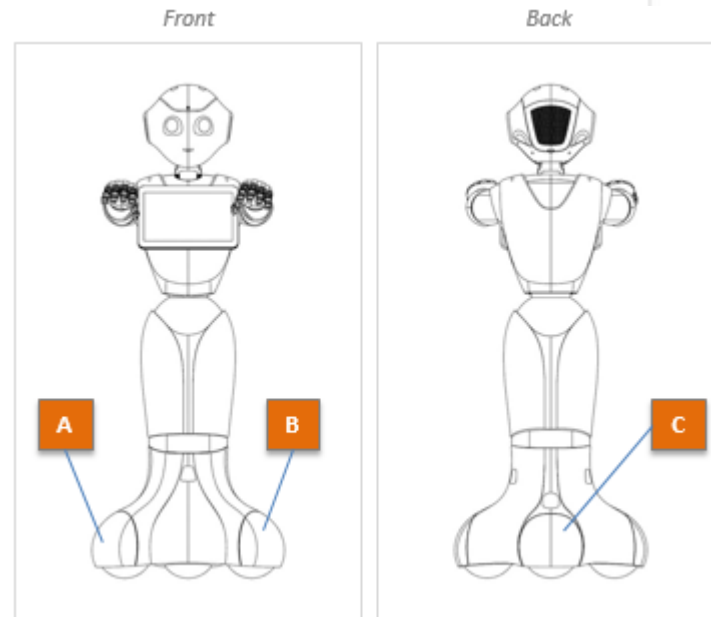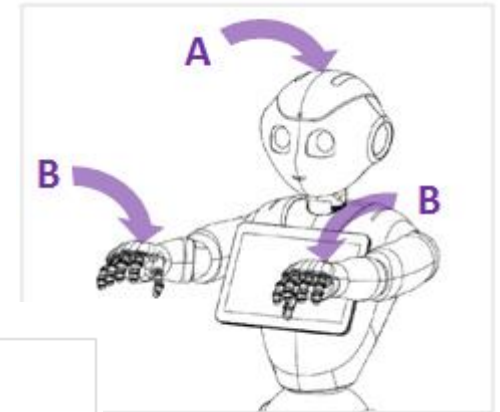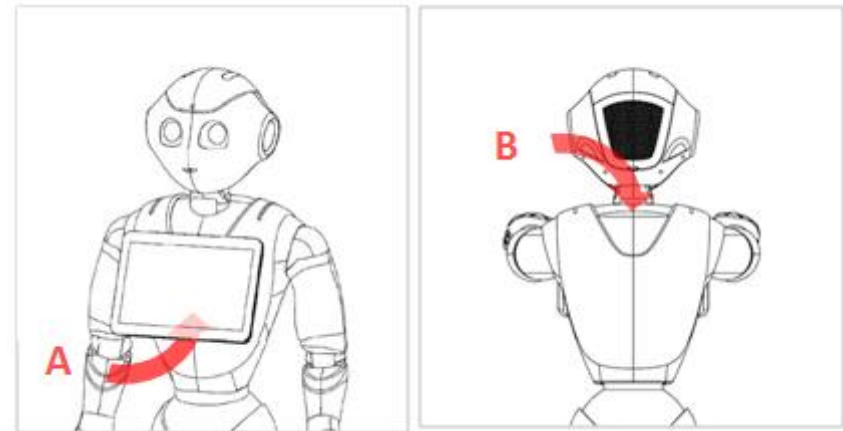WheelB
WheelFR
WheelFL

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› **Loudspeakers, microphones, cameras**

› **LEDs**

› **Laser**

› **Infra-red**

› **Sonar sensors**

› **Motors**

› **Contact and tactile sensors**

Pepper

	Features	Maturity
Speech	Supports English, French, Dutch Tuning of volume, pitch, … Animated speech	★★★
Movements	Gestures & poses	★★
	Walk around	★
Human interaction	Dialogs & speech recognition	★★
	Face recognition Emotion detection	★
Multimedia	Video, images, apps and websites on the tablet	★★★

"Pepper is a human-shaped robot,
kind, endearing and surprising."

Use cases

Digital Reception

- Send invites (QR code)
- Welcome visitors
- Inform host of arrival
- Provide info on meeting room
- Entertain visitor while waiting
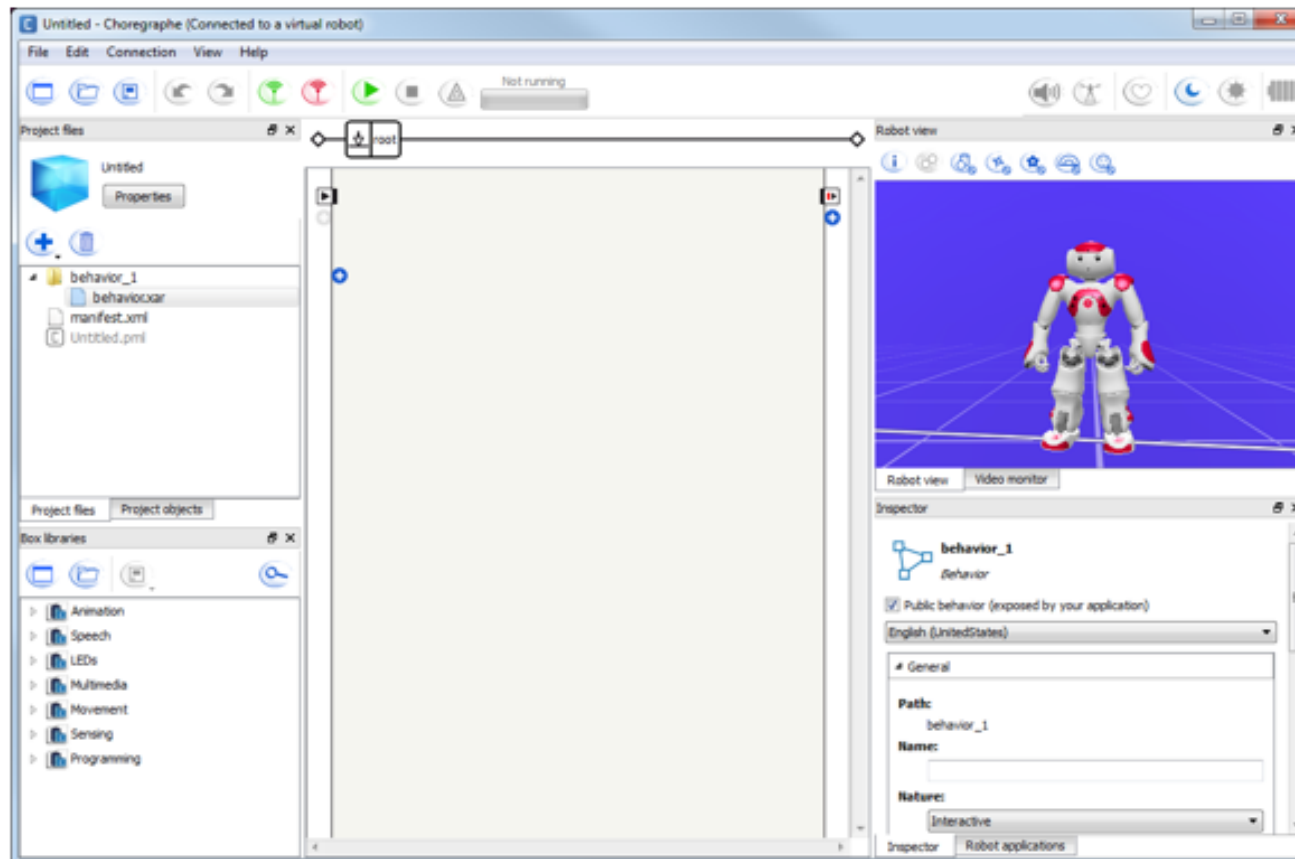- Survey

Cute Entertainer

- Games
- Dance
- Quiz
- Tell stories

Ambassador for Innovation

- Product promotion
- Company promotion
- CMS
- Eyden for easy design of multimedia

gfi
NEW CHALLENGES,
NEW IDEAS

Software

› **NAOqi**

› **SDK's: Python, C++, Java, Javascript**
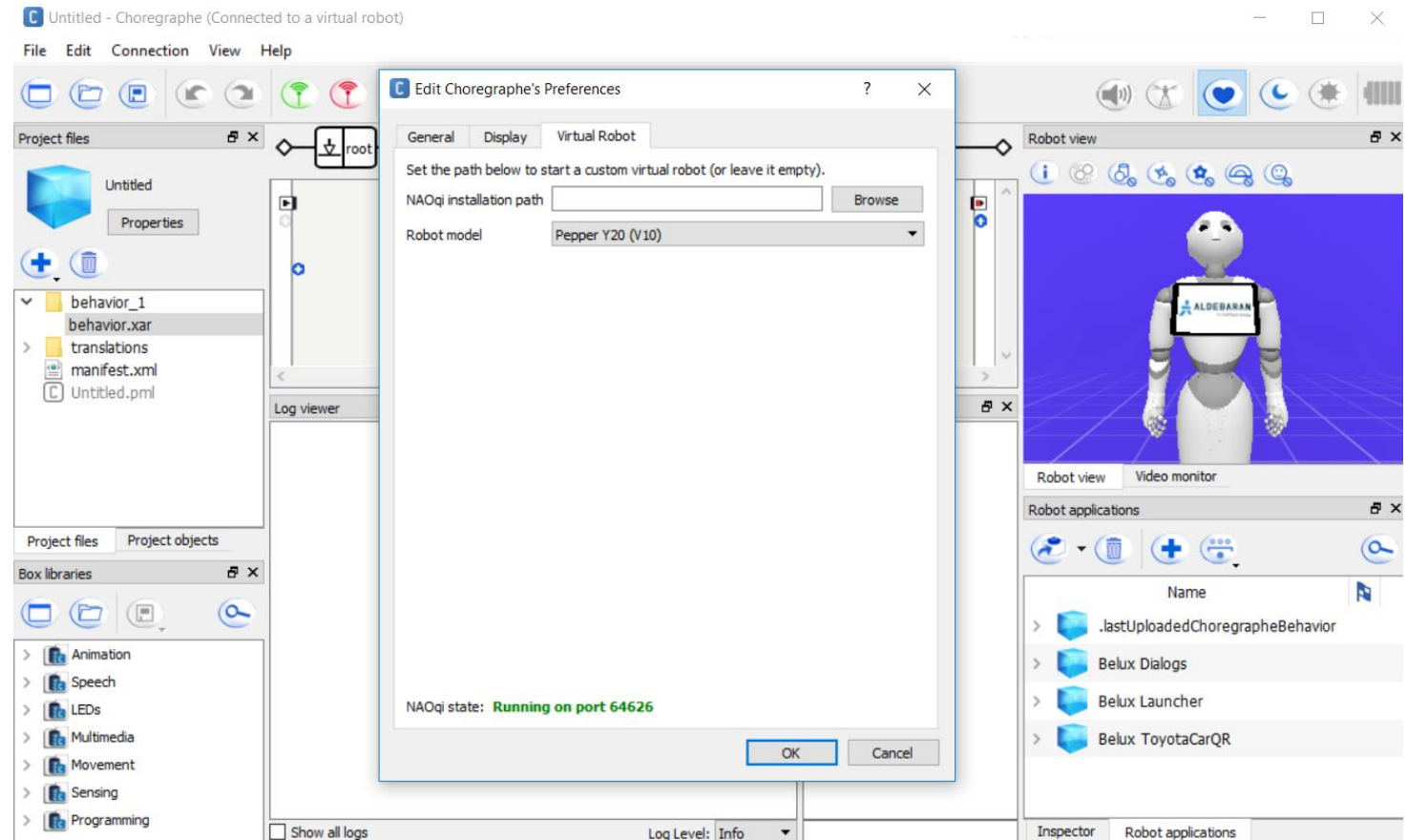
› **Choregraphe**

02

Hands-on

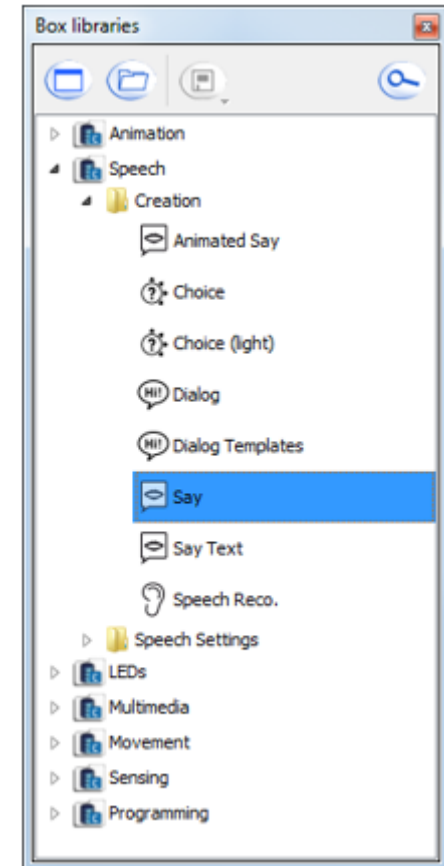# Connect to a virtual robot

Change the robot to Pepper
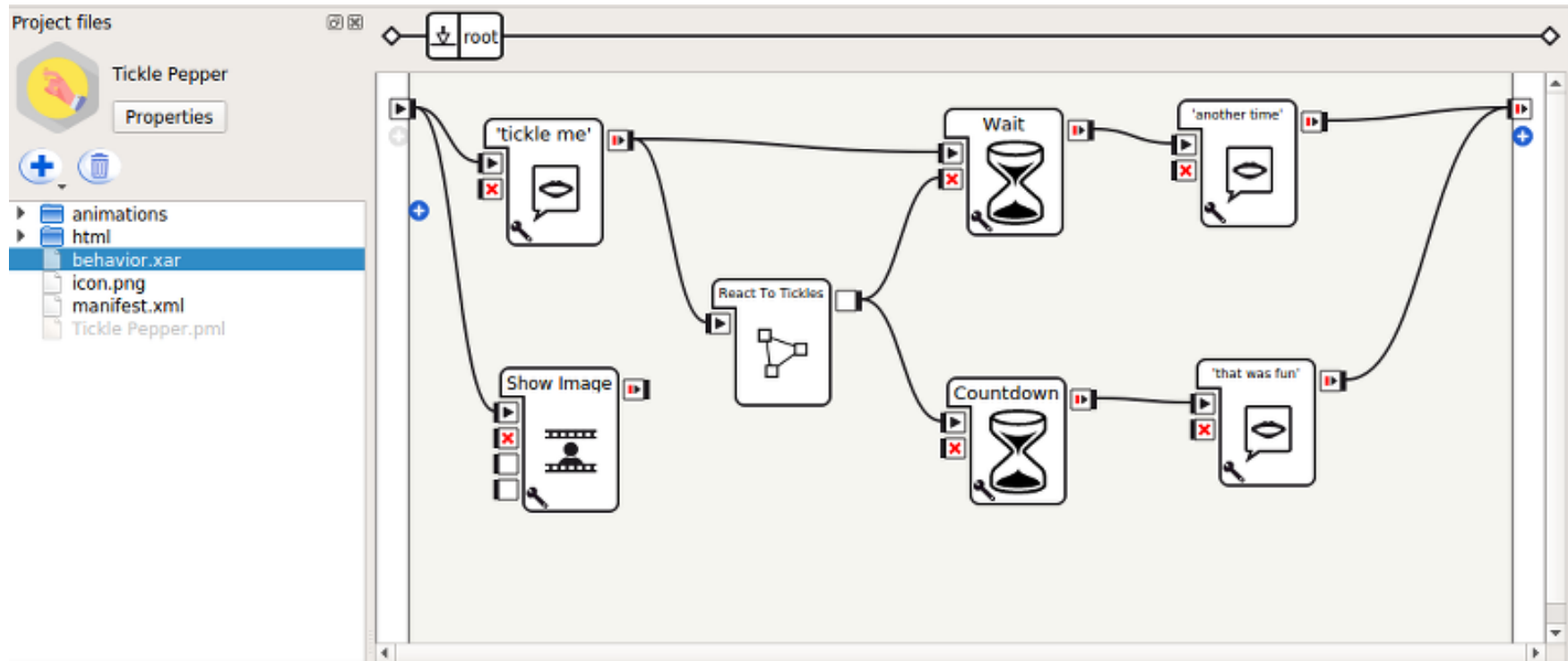
› Edit
› Preferences
› Virtual Robot

Box

› **Basic element**
› **Types: Python, Flow diagram, Timeline, Dialog**
› **Input-output connectors**
› **Optional components**

Exercise: Boxes

Exercise: Dialog

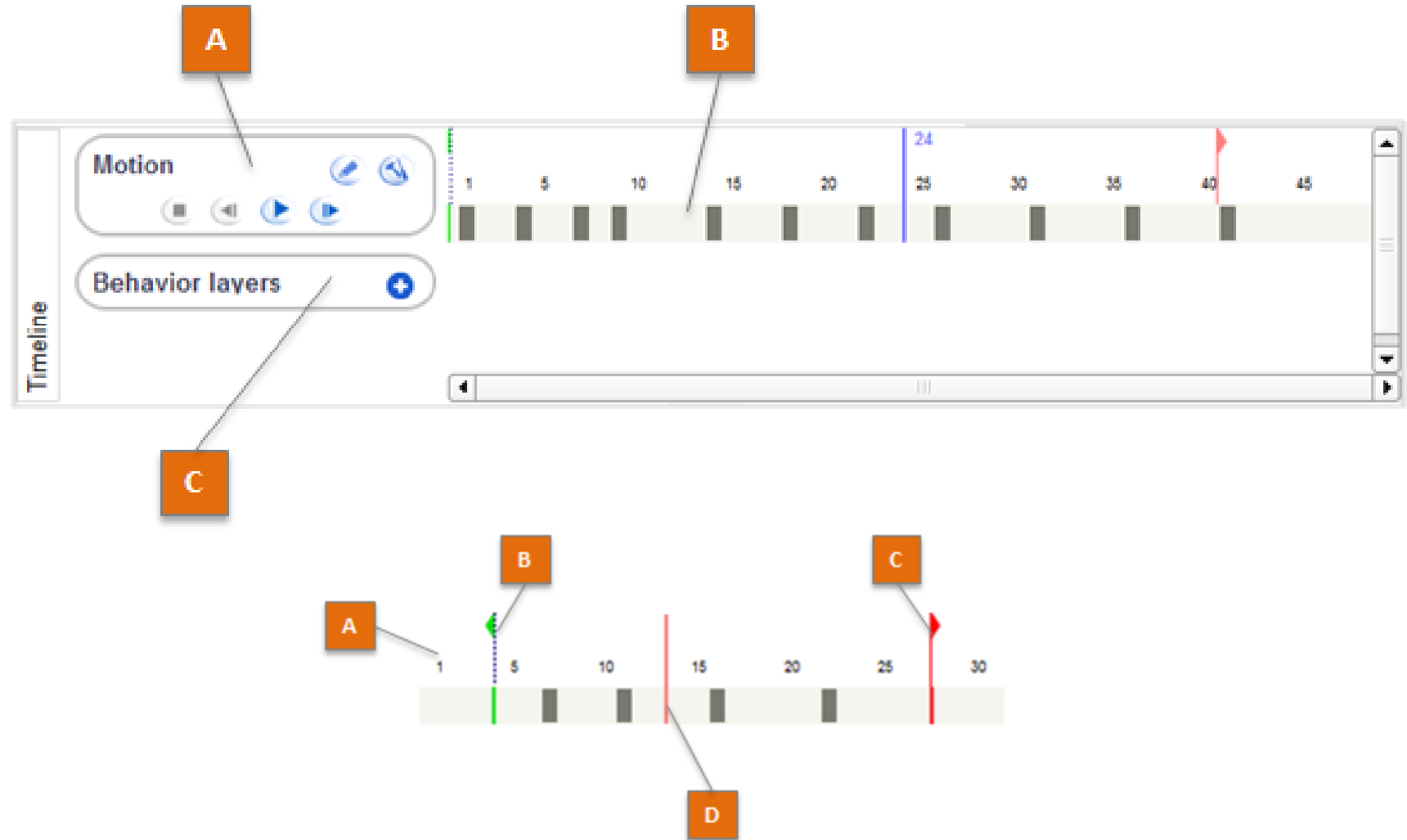**QiChat**

Topic
topic: ~topic_name ()

Rule
u: (human_input) robot_output

Concept
concept:(name) [word1 word2 "word3 word4"]

Exercise: Timeline

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