

Remote Applications in Challenging Environments



# **Required Skills and Qualifications**

- Undertake online training and demonstrate capable use of Spot
- Insurance cover

# **Additional considerations**

• Further training and support can be provided upon request

# **Quadruped - Spot**

Available: 2 sets

Autonomous & tele-operated navigation with mission creation 14kg payload with 90 minutes battery life

### [Factsheet]

#### Standard Kit

- Spot base platform
- 2 batteries with charger
- JXD tablet controller with cable
- Storage and transport case

### **Options**

- Faro Focus 3D S150 scanner
- Spot CAM
- Spot GXP port extension
- Thermal Camera
- Radiation Sensors

Spot is an agile mobile robot that navigates terrain with unprecedented mobility, allowing you to automate routine inspection tasks and data capture safely. Users can integrate their own payloads or choose from existing options.

## Cost





- Permission for commercial operations (PFCO) for multirotor wing UAV
- Full Liability Insurance and Aviation Liability cover

# **Additional considerations**

 DJI Go will need to be installed on the supplied iPad mini which is downloadable from the app store

## **UAV - DJI Matrice 600 Pro**

Available: 1 set

Up to 36 minutes flight time Max payload 6kg

### [Factsheet]

#### Kit contains:

- DJI Matrice 600 Pro UAV platform with flight case
- 12 TB47S intelligent flight batteries
- Battery Case
- iPad mini
- RunCam Eagle 2 FPV Camera

Pre-installed arms and antennas reduce time required for setup and the system's modular design makes it easy to mount additional modules. The airframe is equipped with technologies including the A3 Pro flight controller, Lightbridge 2 HD transmission system, Intelligent Batteries and Battery Management system.

## Cost

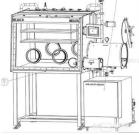












- Familiarity with the use of similar equipment
- Insurance cover

## Additional considerations

• Further training and support can be provided upon request

## Robotic Arm - Kinova Gen 3 Ultra

Available: 2 sets

7DOF Manipulator 4kg Payload with 902mm Reach ROS & Kinova Kortex Software Ready

### [Factsheet]

#### Standard Kit

- Kinova arm inc. AC/DC adapter
- Integrated vision camera
- XBOX One Controller
- Storage & Transport case

#### **Options**

- Qb Softhand gripper
- Haption Virtuose 6D TAO
  High force Haptic controller
- Glovebox Hull

Ideally suited to both research and industrial use. Easy to set up in under 30 minutes and controlled via the provided gamepad controller or optional haptic device. The slender size makes the arm highly suited for glovebox work or mounting to UGV platforms.

## Cost





- Familiarity with the use of similar equipment
- Insurance cover

# **Additional considerations**

• Further training and support can be provided upon request

## Robotic Arm - Kuka LBR iiwa 14

Available: 2 sets

7DOF Manipulator 14kg Payload with 820mm Reach ROS & kuka Software compatible

### [Factsheet]

#### Standard Kit

- LBR arm inc. power supply
- SmartPAD controller
- Electric type media flange

## **Options**

- Onrobot RG6 Gripper
- LBR fitted into Certified Safety enclosure

An extremely precise manipulator, designed to work in isolation or collaboratively with humans. Featuring a small footprint and high payload; proven performance cross industry.

## Cost







- Familiarity with the use of similar equipment
- Insurance cover

# **Additional considerations**

• Further training and support can be provided upon request

# **Barrel Store Mockup Re-configurable Area**

Available: 1 area

24 x 200L Standard Waste Drums arranged in a re-configurable grid array

5 x 5m Footprint that can be expanded Use in conjunction with UGV / UAV such as Spot

#### Standard Kit

Barrel Area

### **Options**

- Spot Quadruped
- Mavic Mini UAV
- Cameras & other sensors
- Radiation sources

This simulated barrel store area is ideal for evaluating mobile vehicles in performing various inspection tasks. This can include visual, thermal, radiation and other types of inspection. The grid can be configured to suit specific needs. Users are able to bring their own equipment to be used in conjunction.

# Cost





- Familiarity with the use of similar equipment
- Insurance cover

# **Additional considerations**

• Further training and support can be provided upon request

# Control Room - Expandable & Mobile -

# from Apr '21

Available: 1 area

Mobile Control room 15 x 5m Expanded footprint 3 x modular desks

#### Standard Kit

- Expandable trailer with A/C
- 3x removable desks
- Viewing, networking, control
- 55kva silent generator
- 63 amp / 3 phase connection

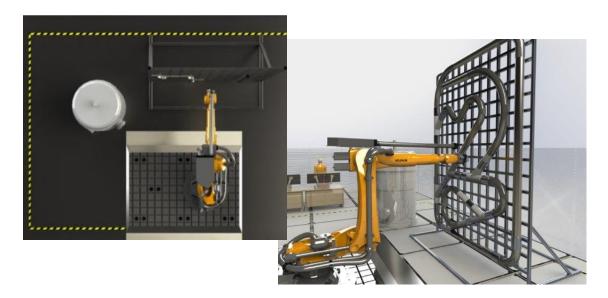
#### **Options**

- Haptic devices & other controllers
- Various cameras, sensors, robots
- VR headsets

This mobile control room can be road transported via standard means and then expanded onsite. It then provides all the necessary infrastructure including desks, viewing monitors, networking, control systems and the such to control any robotic equipment. Hire on its own or with other NNUF equipment.

## Cost





- Familiarity with the use of similar equipment
- Insurance cover

# **Additional considerations**

• Further training and support can be provided upon request

# Process cell - Kuka KR210 Ultra F - from Apr '21

Available: 1 area

Process Plant mock up Robot cell Re-configurable pipe wall with large pressure vessel Kuka KR210 with 210kg Payload, 3.1m reach

### [Factsheet]

#### Standard Kit

- Kuka KR210 inc. SmartPAD
- Pipe Wall
- Control Desk & software
- Pressure Vessel

## **Options**

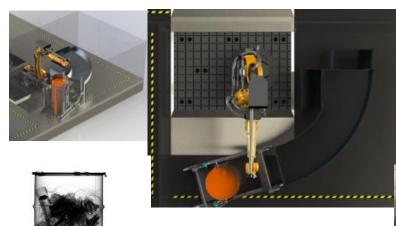
- Pneumatic/Electric Grippers
- Various sensors, cameras

This simulated process plant environment can be used for various tests & demonstrations. This could include pipe/vessel inspection, cutting & downsizing of steelwork and packing of waste. Users are able to bring their own equipment to be used in conjunction with the cell.

## Cost



Remote Applications in Challenging Environments







# **Required Skills and Qualifications**

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# Sort & Segregate - Kuka KR210 Ultra F -

# from Apr '21

Available: 1 area

Sort & Segregate mock up Robot cell Large sorting area Kuka KR210 with 210kg Payload, 3.1m reach

#### [Factsheet]

#### Standard Kit

- Kuka KR210 inc. SmartPAD
- Sorting Area with barrels
- Control Desk & software

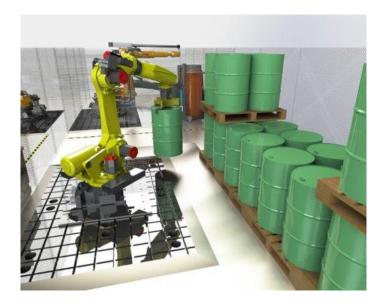
### **Options**

- Pneumatic/Electric Grippers
- Various sensors, cameras

This simulated sort & segregate environment can be used for various tests & demonstrations. Predominantly the unpacking of waste from barrels and subsequent sorting and then re-packing of this waste. Teleoperation or autonomous robot control can be used. Users are able to bring their own equipment to be used in conjunction with the cell.

## Cost





- Familiarity with the use of similar equipment
- Insurance cover

# **Additional considerations**

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# Waste Storage - FANUC R2000iD 165 -

# from Apr '21

Available: 1 area

Waste Storage mock up Robot cell Multi Barrel Waste store area FANUC R2000iD with 165kg Payload, 2.6m reach

### [Factsheet]

#### Standard Kit

- FANUC R2000iD
- Waste Area with barrels
- Control Desk & software

### **Options**

- Pneumatic/Electric Grippers
- Various sensors, cameras

This simulated waste environment can predominantly be used for palletising and sorting of barrels. Inspections can be performed and suspect barrels removed for further analysis. Users are able to bring their own equipment to be used in conjunction with the cell.

## Cost