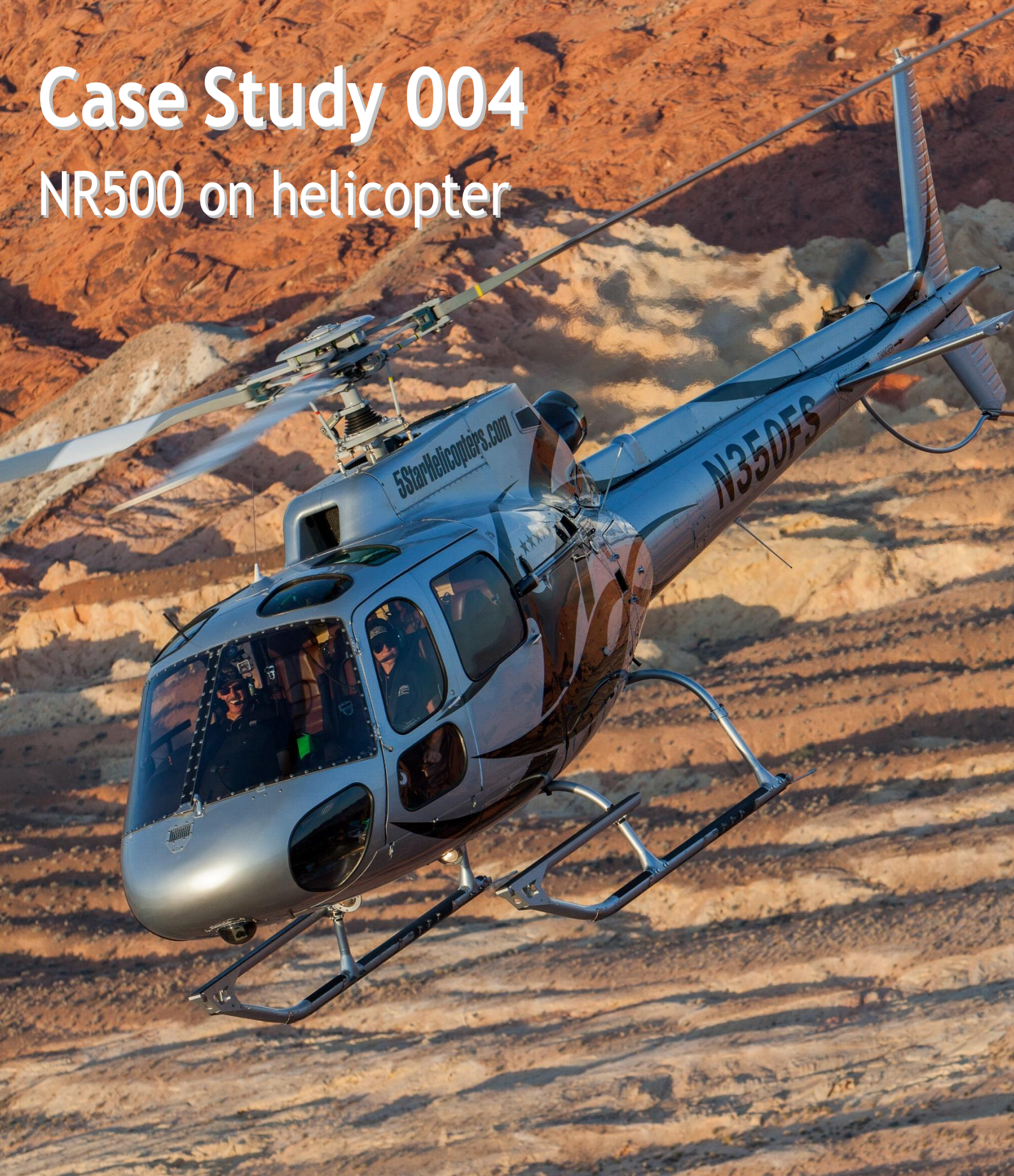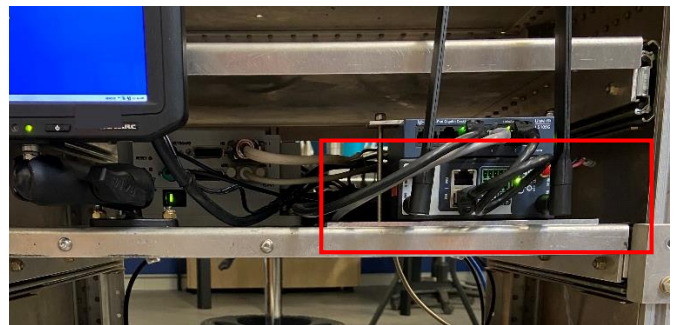# NavigateWorx

Case Study 004
NR500 on helicopter

Customer Background

Customer from Australia, which develop innovative geophysical systems that collect high quality data to provide a new window into the Earth. They provide mobile gravimeters and associated expertise to those wishing to undertake airborne or marine gravity surveys. Their gravimeters can be easily installed in a wide variety of aircraft and can be operated remotely from their head office in Perth, Western Australia.

Customer Needs

Customer want to remote access the gravimeter which is installed in the aircraft (helicopter or airplane). But the gravimeter has specialized software that runs in MS-DOS, they cannot use/install any RDP/VNC software on it. Also, there is no wired line connection from ground after helicopter take off, it is a big challenge that remote access to the gravimeter and data collection in real time during the flight.

Why Navigateworx?

- **Working In Harsh Environment**

With NR500 LTE VPN Routers, now it's flexible enough with its strong and high EMC level design, it could get all equipment connected and have internet access to be online for remote visitors all the time.

- **Reliable Network Communication**

NR500 LTE VPN Routers provides reliable low latency communications between machines and the center. Dual SIMs capabilities for redundancy mobile operator, switch cellular link between different 4G mobile data carriers.
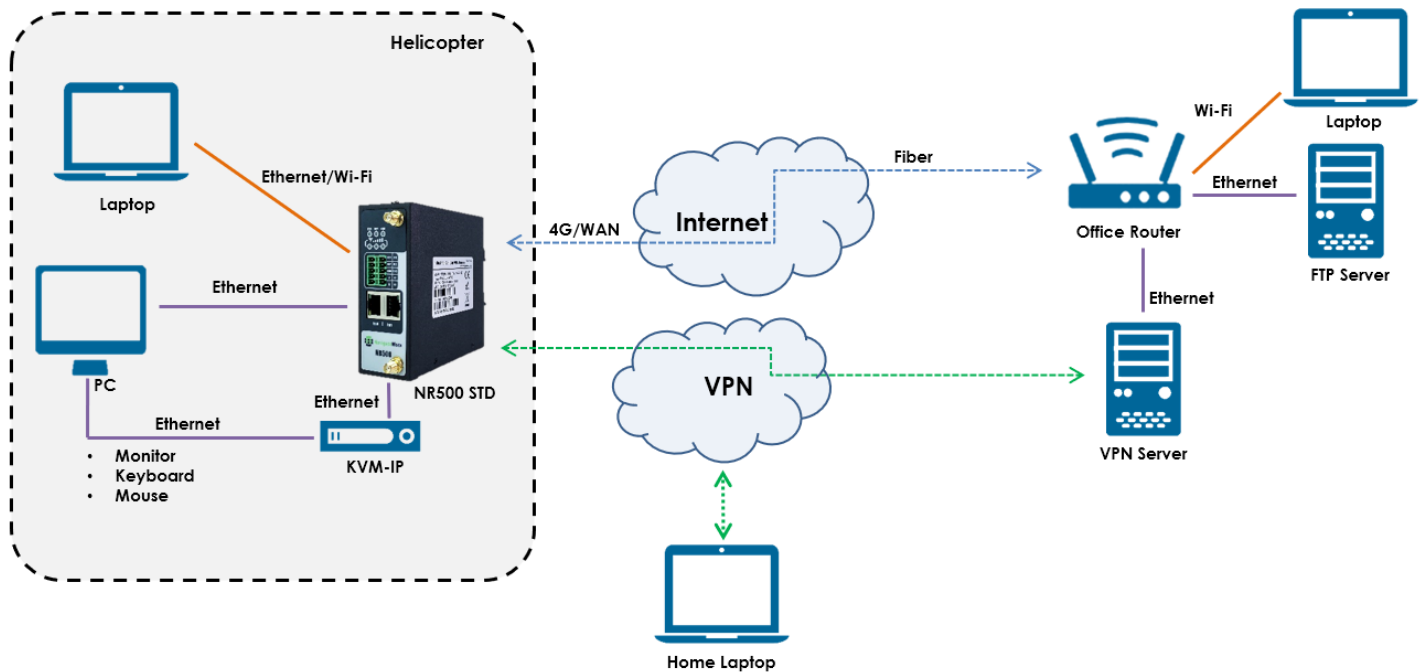
- **Multiple Industrial Interface for Machines**

NR500 LTE VPN Routers has 2 x Ethernet ports, 1 x RS232 and 1 x RS485 interfaces supports Serial to IP communication. 2 x Digital Input and 2 x Digital Output for the connection of Sensors and Actuators.

- **Saving Costs**

Navigateworx help engineers monitor real-time operation of the machines, response to faults with shortened time, and plan for preventive maintenance, saving both manpower and costs significantly.

Solution Application

Solution Advantage

- The gravimeter is installed in the aircraft (helicopter or airplane) and connect to NR500. Customer are using a KVM-IP box that is also connected to the NR500 to enable full screen and keyboard access for gravimeter system.

- NR500 establish VPN tunnel with office VPN server. Office computers, or anywhere in the world customer can remote access the gravimeter system through the VPN network.

- Customer can access Windows, which then allows uploading of data to their office and any other configuration of the sensor required. They can also access our GPS, thermal stabilization and all other devices required that can be easily plugged in by local technicians on the ground.

Customer Feedback

Overall it is working well. Our newly updated website also talks about us having remote access to our instruments world-wide and the NR500 is a key component is being able to achieve this.

-- SAID BY MR. Fellows

Product Highlights - NR500 STD

Dual SIM failover	Redundancy mobile operator, switch cellular link between different 4G mobile data carriers.
Data Ports	2 x RJ45 + 4G Modem Serial port: 1 x RS232 + 1 x RS485 Digital IO: 2 x DI + 2 x DO
Wide Range Power input	9 to 48 VDC
VPN Features	IPSec, GRE, PPTP/L2TP, OpenVPN
SMS Control	SMS Configuration, SMS Gateway, SMS Notification
Modbus Gateway	Provides protocol conversion between Modbus/RTU (or ASCII) and Modbus/TCP

About Navigateworx

Guangzhou Navigateworx Technologies Co., Ltd is a dedicated IIoT / M2M Hardware Manufacturer and Solution Provider. Since its establishment on the forefront of the evolving IIoT / M2M Industry, she offers a unique combination of extremely talented Wireless and Wireline Experts to help you navigate the overwhelmingly complicated IIoT / M2M Industry.

We continue to learn and embrace the front line of advanced technology in the IIoT / M2M Space and bring practical and dependable Solutions to our customers. We have enhanced and utilized the most effective and efficient Technologies, Processes, and Procedures in the IIoT / M2M Market to continuously develop, deploy, manage our products and services to our customers.

NavigateWorx Hardware and Solutions had been widely used in different vertical markets like Energy (e.g. Wind Turbine Generator Monitoring), Retail (e.g. Vending Machines / Kiosk), Smart City (e.g. Video Surveillance), Environment (e.g. Weather Station Remote Monitoring), Transportation (e.g. Intelligent Traffic System), Industrial Automation (e.g. Package Machines Remote Monitoring) etc. With the great help of Global Distribution Network, our Routers had been shipped to more than 80 Countries and we're proud to contribute our effort into IIoT / M2M Market.

NavigateWorx would continually concentrate on IIoT / M2M Industry and bring more and more reliable, trustable Solution for our clients. That is NavigateWorx.