ERP AIRFORCE

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WHY ELEPHANTS AND RHINOS NEED THE ERP AIRFORCE

With the alarming level of threat facing elephants and rhinos, traditional methods of supporting conservation are no longer adequate to protect the critical wild populations of these species. Conservation methods have not changed much in 50 years and putting more people on the ground is simply not enough if we are to truly save these great animals, a game changing force multiplier is required.

The ERP strategy is to combat the widespread slaughter of elephants and rhino in Southern Africa by alleviating the pressures associated with poverty in rural communities in areas adjacent to the threatened species, which pressures have been and are conducive to the proliferation of the slaughter of elephants and rhino. But this strategy will likely only deliver results in the medium term and ERP therefore implements a range of tactical measures designed to combat the poaching problem in the short term. The ERP Air Force is one of those tactical initiatives.

The ERP Air Force leverages technology across a wide spectrum, in support of the conservation effort. A UAV platform, SAP cloud based software technology and people, have already made a meaningful impact. Through the use of the SAP Cloud Platform (SCP) and the SAP Fiori mobile libraries, the ERP Airforce has been able to build a novel solution in a non-traditional SAP market segment, changing the way conservationists protect and monitor endangered wildlife. The solution has been successfully piloted as part of a larger elephant and rhino conservation programme at the Dinokeng Reserve, a 45,000-acre reserve within the Gauteng province of South Africa.

What makes Dinokeng Reserve noteworthy is not only its proximity to the most densely populated area of Southern Africa, but also that it was formed through an inclusive process, where private landowners, rural communities and government worked together to drop fences and incorporate large tracts of land, as opposed to the more typical exclusionary approach in erecting fences in pursuit of creating conservation areas.

This inclusive process is one that resonates strongly with ERP and we are actively seeking support from partners to expand the size of the existing ERP Airforce UAV fleet, and to extend the capabilities of the ERP Airforce in other areas, including the incorporation of conventional aircraft.

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HOW DOES THE ERP AIRFORCE MAKE AN IMPACT?

In its present form, the ERP Airforce comprises our extendible, rugged UAV platform, our software technology platform – built using the latest SAP HANA technologies – and our people.

In terms of the software platform, the ERP Airforce currently makes exclusive use of the SAP Cloud Platform (SCP) and the SAP Fiori mobile libraries for cloud computing and mobile front-end requirements, respectively. The levels of innovation and flexibility on offer from these two SAP technologies are crucial to meeting the rapidly changing needs of the conservation team.
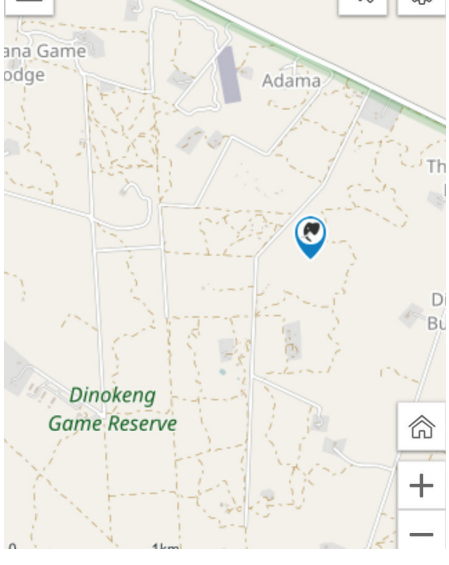
At present, surveillance coordinates from the UAV and location coordinates from the elephant's collars are stored in the SCP database, through use of the associated Internet of Things (IoT) framework. This data is then relayed to conservation users' mobile devices in the field through our "Find my Elephants?" app built upon the SAP Fiori libraries and the use of the "Find my Elephants" app has had within the Dinokeng Reserve in just six months is overwhelming.

Elephant breakouts from the reserve used to occur frequently, resulting in damage to property and loss of life. With the advent of the ERP Airforce, conservationists are now empowered to act pre-emptively when an incident could potentially occur, rather than after the fact. This is due to the accuracy of the satellite collars, and instant access to information through the app and rapid response of the UAV. Since deployment of the ERP Air Force initiative at Dinokeng, no elephants have been harmed and no human injuries or loss of life have occurred while the ERP Airforce has been operational.

With Dinokeng hosting a significant population of white rhino, and having suffered poaching incidents in 2015 and 2016, the worth of the ERP Airforce's anti-poaching capability has been vividly demonstrated. Thanks to High-Definition cameras and military-grade infrared optics, countless potential poachers were identified and chased away, or apprehended within the reserve. Zero poaching incidents have occurred in Dinokeng while the ERP Airforce has been in operation.

To illustrate the point more compellingly, all of the neighbouring reserves experienced poaching incidents during this period.

Enabled by the ERP Airforce's anti-poaching capability, Dinokeng Reserve's management is currently looking to participate in a further black rhino preservation effort, with 15 black rhino potentially being introduced into the park.

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ERP AIRFORCE NEXT STEPS AND EXPANSION OPPORTUNITIES

Given the continued success of the ERP Airforce pilot programme at Dinokeng Reserve, the future ERP Airforce roadmap will leverage the following SAP technologies:
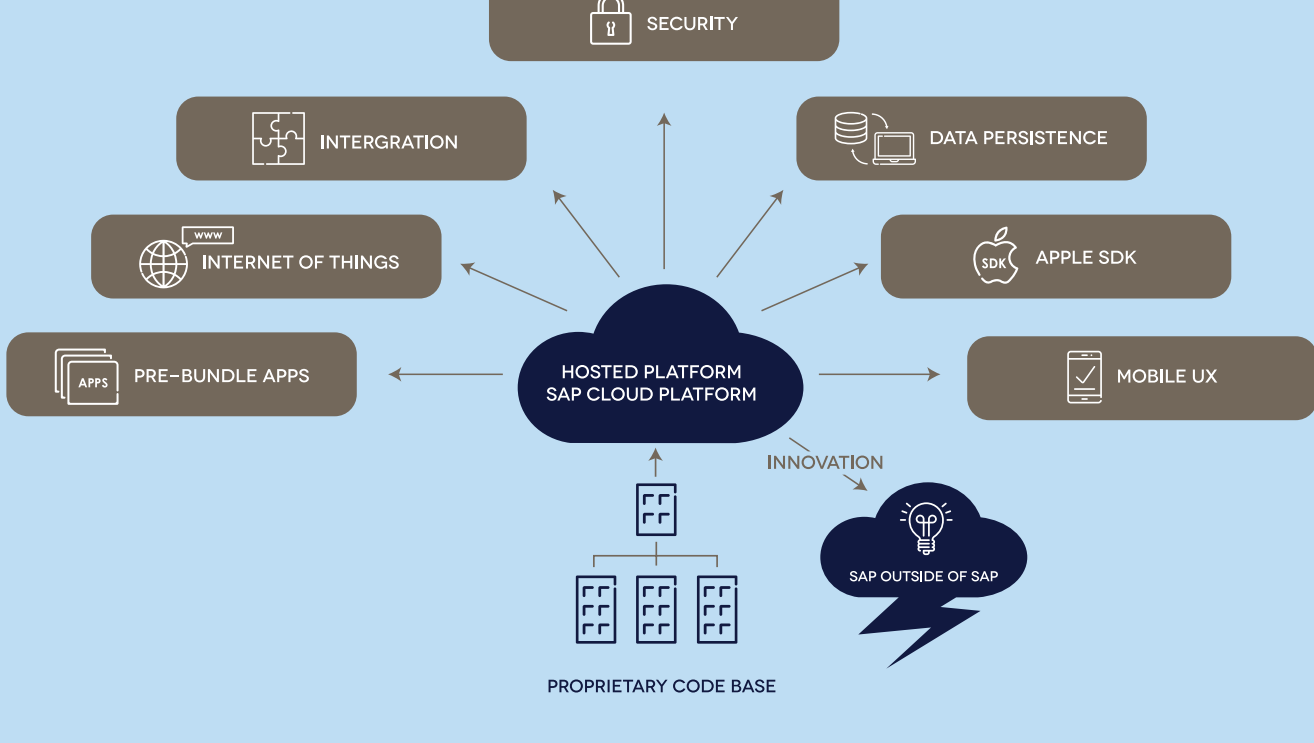
• Expanded use of the SAP Cloud Platform: to provide accessible secure storage and a cloud server platform for our ERP Airforce solution;
• Expanded SAP Fiori Mobile Solutions, Apple iOS and Android native SDK's: to make data available to relevant people in the field;
• Big Data capabilities of SCP: the power of the SAP HANA database in the cloud to store and analyse large amounts of data, key for pattern matching artificial intelligence algorithms;

• SAP Analytics: detailed, fast analytics for strategic reports on data gathered by multiple ERP Airforce UAV's, serving multiple roles, in multiple areas; and
• SAP Leonardo and Clea: the ability for our ERP Airforce to learn how to analyse footage for potential threats or optimize flight paths would allow us to scale significantly.

Given the nature of the ERP Airforce solution, it presents a compelling opportunity to drive the testing of innovation and collaboration in the field, while still adding immense value to the conservation cause, one that our people care deeply about.

Should the ERP Airforce continue to improve and scale, there may be significant commercial opportunities in the agricultural sector around livestock monitoring.

The parallel opportunities into asset tracking, geographic surveying, security and disaster response are within reach too due to the modular, component-based design of the total ERP Airforce solution.