

## Project Management Update from Zimbabwe<sup>1</sup>



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### Zimbabwe's Historical 1<sup>st</sup> orbit Satellite Project Launched

Zimbabwe's Tech and Project Management community was on cloud 19 in celebrations, following the historical inaugural launch of an orbiting satellite to space amongst other payloads on 7 November 2022. Dubbed ZimSat-1, the satellite project was launched under the NASA sponsored BIRD 5 project that is set to piggyback Zimbabwe and Uganda.

The BIRDS Project was rolled out to allow countries without space agencies and orbiting satellites to be able to do so primarily for their first satellite. As for the BIRD 5 Project, it is the 5th edition which is now primarily catering for Zimbabwe and Uganda's first satellites. Zimbabwe's part of the payload on Northrop Grumman's Antares rocket is a 1U CubeSat portable satellite that was co-developed with Japan. This satellite is modular with the smallest module or smallest functional system being a cube that is 1U (1 unit) in size hence the name. The sensor equipped on the satellite is a camera that will be used to gather visual and spectral data on the surface conditions of the area being observed. Processing of this data from the camera sensor as well as other features of the satellite like communication and management of the satellite in orbit will be handled by 3 Raspberry Pi boards.

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According to one of the Project Managers, Painos Gweme of Zimbabwe's National Geo-spatial and Space Agency (ZNGSA), data gathered & processed by ZimSat-1 will include:

- Land Use and Cover

The satellite images taken by multispectral camera made by BIRDS 5 members with a spatial resolution of 100m shall be used to investigate land Use and cover such as crop health, soil adjusted vegetation index, cultivated area and leaf chlorophyll index using NDVI Images.

- Soil Fertility

The multispectral camera shall be used to capture images of the member countries. The images shall facilitate analysis of the nitrogen/fertility level of soil using GIS software.

- Water Quality Assessment

Satellite images of dams and lakes captured by a BIRDS 5 made multispectral camera shall be used as a demonstration of water quality assessment using 1U satellite with spatial resolution of 100m. The multi-sectoral camera has a remote standing camera which will be used by Agro scientists primarily for agricultural application, crop yield estimation, land cover and land use. "We can see our forestry and the change over time because it has what we call a store and forward mission as part of the pilot which we are going to use together with the ground centre terminal," said Project Manager Painos Gweme of Zimbabwe's National Geo-spatial and Space Agency (ZNGSA) in a launch statement.

The BIRD 5 project also has an Android app called BIRDSNEST available on Google play. It shows some photos of the progress they have made since the BIRDS 1 project and some other details like tracking the satellites, CAD models of the satellite you will have selected in tracking, and system data on the satellite like battery voltage, solar panel temps and which side of the earth the satellite is operating from (Day or Night).

Zimbabwe's satellite is part of a larger payload consisting of some supplies going to the International Space Station (ISS) and other CubeSats. Two 1U CubeSats (Zimbabwe & Uganda) and one 2U CubeSat belonging to Japan.

Zimbabwe's ZimSat-1 is piggybacking on the NASA rocket which was already heading in the same direction where the Japanese satellite station (JAXA) KIBO module is located. This KIBO station is where the Cube Sats will be deployed from ZimSat-1.

The launch of ZimSat-1 was supposed to have been launched on 6 November 2022 but was aborted for one day following a fire alarm trigger in the NASA control room that disrupted the planned launch schedule by several hours.

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*The above is based on announcements by the Zimbabwe national government and news reports in Zimbabwe media.*

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## About the Author



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**Peter Banda** is an agile Portfolio Manager with Change Management, Marketing & Project Management Skills, and an accomplished entrepreneur with broad stakeholder management experience. He is a founder member of Zimbabwe's largest Association of Project Managers with a membership of over 4000, Project Management Zimbabwe (PMZ). He has worked in both the private & public sectors during the last 20 years in Zimbabwe, Botswana & South Africa. Peter is a born & passionate teacher, mentor & trainer with skills ranging from Personal Development Planning to Project Management. Peter has presented & published over 30 papers at high profile international conferences & leading newspapers & publications respectively during the last 10 years.

Peter is currently Secretary- General & CEO of PROJECT MANAGEMENT ZIMBABWE (PMZ). Responsibilities cover strategic navigation of PMZ towards the vision covering board advisory and stakeholder management. He was previously a Higher Education Examiner, Facilitator, Lecturer, Curriculum Developer and Assessor for both local and

International Diploma and Degree courses for the Zimbabwe Ministry of Higher & Tertiary Education. Peter holds a Bachelors (Hon.) degree and MSc qualification, and is currently studying for a PhD & other certifications. A God-fearing father of 2 lovely daughters & 1 son, Peter likes reading & researching current affairs, coaching others to realise their dreams, and watching soccer & cricket.

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