



PROJECT MANAGEMENT 3  
GROUP PROJECT MANAGEMENT  
DELIVERABLE 5

**GROUP NAME AND MEMBERS**

GROUP NAME	INDUSTRIOUS IRISES PROJECT
Student Numbers	Members
1) 220370842	ANALO PRECIOUS GCEBA
2) 220366748	NONKULULEKO MKWENKWE
3) 220457026	SONELISE HLABENI
4) 220276595	ANDILE NOMAQHIZA
5) 220205922	MBUYISELI CIMELA
6) 220602034	THABISO MOHALE
7) 220425272	LUPHIWE NYAWO
8) 220103739	WANGA BALEMINI
9) 220201722	ABONGILE DOTYE
10) 219309124	AKHULE KILILI

**Project Title: ENTERPRISE-WIDE INTERGRATION OF AUTOMATION AT WSU IBIKA  
CAMPUS**

**BY  
INDUSTRIOUS IRISES**

# WALTER SISULU UNIVERRSITY

## Information and Communication Technology



MEMORANDUM TO: MR NGINI





FROM: INDUSTRIOUS IRISES

DATE: 18 AUGUST 2022





SUBJECT: INENTORY REPORT

This memo describes the action report and recommendations of our project, which is now under way and has the goal of enhancing our campus' network and security to increase its productivity and efficiency through improved IoT network infrastructure. This research identifies the intermediary and security devices, as well as their models, media usage, connectivity, and intended uses. We will provide suggestions on how to enhance the functionality of these devices as soon as we have determined the intermediary and security devices. This report will also include the general state of the project and the internal and external human resources that will be required to complete the project. Existing Intermediary and Security devices

NO	DESCRIPTION	DEVICE										
1	<p><b><u>Mesh Access Point</u></b></p> <p><b>Function:</b> Allows an access point to communicate with the network using radio link to route the network traffic towards the destination.</p> <p><b>Future Status:</b> Allow connection of multiple devices from different points</p> <table><tr><td><b>Media</b></td><td>Wireless</td></tr><tr><td><b>Model</b></td><td>Aironet 552E</td></tr><tr><td><b>Cost</b></td><td>R2 724,00</td></tr><tr><td><b>Connected to</b></td><td>Internet</td></tr><tr><td><b>Manufacturer</b></td><td>Cisco Company</td></tr></table>	<b>Media</b>	Wireless	<b>Model</b>	Aironet 552E	<b>Cost</b>	R2 724,00	<b>Connected to</b>	Internet	<b>Manufacturer</b>	Cisco Company	
<b>Media</b>	Wireless											
<b>Model</b>	Aironet 552E											
<b>Cost</b>	R2 724,00											
<b>Connected to</b>	Internet											
<b>Manufacturer</b>	Cisco Company											
2	<p><b><u>FortiGate</u></b></p> <p><b>Function:</b> Prevents threats and filters unwanted web contents</p> <p><b>Future Status:</b> Periodically updates firmware to include security enhancements</p> <table><tr><td><b>Media</b></td><td>RJ-45 rollover cable</td></tr><tr><td><b>Model</b></td><td>FG-5001E</td></tr><tr><td><b>Cost</b></td><td>R794 589,26</td></tr><tr><td><b>Connected to</b></td><td>Servers, Internet, and other registered devices</td></tr><tr><td><b>Manufacturer</b></td><td>Fortinet</td></tr></table>	<b>Media</b>	RJ-45 rollover cable	<b>Model</b>	FG-5001E	<b>Cost</b>	R794 589,26	<b>Connected to</b>	Servers, Internet, and other registered devices	<b>Manufacturer</b>	Fortinet	
<b>Media</b>	RJ-45 rollover cable											
<b>Model</b>	FG-5001E											
<b>Cost</b>	R794 589,26											
<b>Connected to</b>	Servers, Internet, and other registered devices											
<b>Manufacturer</b>	Fortinet											
3	<p><b><u>Access point</u></b></p> <p><b>Function:</b> Support IEEE 802.11ac, 802.11b and 802.11n networking</p>	<p>3</p> <p><b>Future Status:</b> Support optical fiber- based network connectivity for remote locations</p>										

	<table><tr><td>Media</td><td>Wireless</td></tr><tr><td>Model</td><td>1562i</td></tr><tr><td>Cost</td><td>R10 167,71</td></tr><tr><td>Connected to</td><td>Management console port RJ-45</td></tr><tr><td>Manufacturer</td><td>Cisco</td></tr></table>	Media	Wireless	Model	1562i	Cost	R10 167,71	Connected to	Management console port RJ-45	Manufacturer	Cisco	
Media	Wireless											
Model	1562i											
Cost	R10 167,71											
Connected to	Management console port RJ-45											
Manufacturer	Cisco											
4	<p><b><u>Wireless Controller</u></b></p> <p><b>Function:</b> provides centralized control, management and troubleshooting for high-scale deployments in service provider and large campus deployments</p> <p><b>Future Status:</b> Enhance the scale of 500 Aps, 7000 clients and 8Gbps maximum throughput</p> <table><tr><td>Media</td><td>Wireless</td></tr><tr><td>Model</td><td>5520</td></tr><tr><td>Cost</td><td>R337 480,28</td></tr><tr><td>Connected to</td><td>Access points</td></tr><tr><td>Manufacturer</td><td>Cisco</td></tr></table>	Media	Wireless	Model	5520	Cost	R337 480,28	Connected to	Access points	Manufacturer	Cisco	
Media	Wireless											
Model	5520											
Cost	R337 480,28											
Connected to	Access points											
Manufacturer	Cisco											
5	<p><b><u>Router</u></b></p> <p><b>Function:</b> Hugely improves transmission performance and do great job under various complex environment.</p> <p><b>Future status:</b> Sold and replaced due to increase of numbers that it may need to accommodate in future</p> <table><tr><td>Media</td><td>Wireless</td></tr><tr><td>Model</td><td>EAN 9195427263549</td></tr><tr><td>Cost</td><td>R1 300,00</td></tr><tr><td>Connected to</td><td>Internet</td></tr><tr><td>Manufacture</td><td>Om Vasuhare</td></tr></table>	Media	Wireless	Model	EAN 9195427263549	Cost	R1 300,00	Connected to	Internet	Manufacture	Om Vasuhare	
Media	Wireless											
Model	EAN 9195427263549											
Cost	R1 300,00											
Connected to	Internet											
Manufacture	Om Vasuhare											
6	<p><b><u>Switch</u></b></p> <p><b>Function:</b> Provide true stacking capability allowing you to configure, manage, and troubleshoot all switches in a stack as a single unit.</p> <p><b>Future status:</b> Sold and replaced because we might need to buy the latest model.</p> <table><tr><td>Media</td><td>ethernet cable</td></tr><tr><td>Model</td><td>0882658808821</td></tr><tr><td>Cost</td><td>R64 000,00</td></tr><tr><td>Connected to</td><td>Server</td></tr><tr><td>Manufacture</td><td>Cisco</td></tr></table>	Media	ethernet cable	Model	0882658808821	Cost	R64 000,00	Connected to	Server	Manufacture	Cisco	
Media	ethernet cable											
Model	0882658808821											
Cost	R64 000,00											
Connected to	Server											
Manufacture	Cisco											
7	<p><b><u>Server</u></b></p> <p><b>Function:</b> To share data as well as to share resources and distribute work</p> <p><b>Future status:</b> sold and replace</p> <p><b>Media:</b> Wired</p> <p><b>Model:</b> Cisco ucs c4200 series rack server</p> <p><b>Cost:</b> R37844</p> <p><b>Connected to:</b> Switch</p> <p><b>Manufacture:</b> Cisco</p>											

- The Mesh 1552E that is now being used on the Ibika campus enable users to establish successful connections and increase its reach without sacrificing the quality of Internet connections. This AP type offer 2.4GHz and 5GHz radios. In the mesh mode, the 5GHz radios are utilized for both local access and wireless backhaul, whereas the 2.4GHz radios are primarily used for local access on the Mesh AP.
- This kind of mesh AP provides flexible connectivity by allowing hundreds of users to connect to the network, but the problem is that the connection slows down when numerous users are joining simultaneously in the same place.
- The university uses the FortiGate 5001E network security system, which is endorsed by many businesses since it provides both intelligence and protection by including antivirus, Web filtering, intrusion prevention system (IPS), application control, and anti-spam, among other features. To ensure its security, it encrypts traffic leaving the system.
- Cisco ucs c200 server is a high density, 2-socket, 1 rack unit rack server built for production level network infrastructure, web services and mainstream data center, branch and remote office application, it also delivers better application performance.

No	Description	Devices
1	<b>Asus ZenWiFi XT8 AX6600</b> <b>Vendor:</b> Incredible Connection <b>Functionality:</b> Offers tri-band radios, connects to wired and or wireless backhaul with speeds of 2Gbps to WAN ports and 3Gbps to LAN ports <b>Price:</b> R13,999	
2	<b>FortiGate FG-5001E1</b> <b>Functionality:</b> Adds an internal 480 GB SSD log disk <b>Vendor:</b> avfirewalls <b>Price:</b> R971 142,00	
3	<b>LG IRIS ACCESS3000</b> <b>Vendor:</b> Iris ID inc <b>Function:</b> It complements token or pin based system to provide a high integrity security overlay that boost return on investment and security efficiency of the security systems already in place. <b>Price:</b> R8842,28	
4	<b>Fingerprint readers</b> <b>Vendor:</b> Fruugo <b>Functionality:</b> Fingerprint collection, fingerprint registration, fingerprint comparison and fingerprint search <b>Price:</b> R 849.00	

## Intermediary Devices Required

### Specialized Human Resources (Experts)

We as the project team will require an experienced infrastructure engineer to aid in tracking, evaluating, deploying, building, maintain and installation of devices and an IT resource manager to monitor and oversee daily operations, including server hardware, software and operating systems, managing the present and future internal resources. Coordinating technology installations, upgrade and maintenance.

### Overall Status of the Project

Human Resource	Quantity	Duration	Qualifications	Salary/P rice	Skills and Functions
Infrastructure Engineers	2	7hrs/day and 5 days a week for four months starting from the 26 <sup>th</sup> of January 2021	4-year BA in Computer Science and certifications including CCNP, MCITP and/or VCP	R20000 p/m	It is strongly advised to have knowledge of network hardware technologies and keen attention to detail. The infrastructure environment and/or facilities are maintained and monitored as functions.
IT Resource Manager	1	4hrs/day, and 5days a week for three months starting from the 26 <sup>th</sup> of January 2021	HR related studies with 3 years of professional experience in Project Management	R15000 p/m	Proficiency in project management skill is highly recommended. Functions include assigning roles and skills for the current project portfolio.

The following are the project deliverables that were carried out as part of solution planning.

- Our project charter on file formally approves the project's existence and the beginning of work on it. In the project charter that is presently being created, the scope of work, primarily the objectives and requirements are mentioned.
- The scope statement was released following the approval of the project charter. It featured the work breakdown structure, that divides the project duties into manageable parts.
- The initial Gantt chart has also been created, which aids in organizing the sequence in which the tasks will be accomplished as well as project scheduling by estimating how long the project should take.
- Currently there are three deliverables that still need to be completed resource management, formatting the final Gantt chart and budget report, and project simulation.

The present intermediary devices need to be upgraded and updated for greater functionality,internet access,availability to increase wireless connectivity within campus infrastructure.

Our team has been cooperating closely to prevent the project from failing, but we trust that by highlighting the pertinent data in our report, the resource requirements have not been overlooked.

This memo will serve as a reference for the campus infrastructure's implementation in future projects.

## CITATION

- Rahman, S. I., & Cam-Winget, N. (2012). *U.S. Patent No. 8,102,814*. Washington, DC: U.S. Patent and Trademark Office. <https://getinternet.com/mesh-network/>
- Faizan, M., Hegde, S. S., & Yaligar, N. V. Comparison between Cisco ASA and Fortinet FortiGate.  
[www.fortinet.com/forti.net/fortiguard](http://www.fortinet.com/forti.net/fortiguard)
- Wireless LAN Controller 5520 <http://www.cisco.com/c/en/us/products/wireless/5520-wireless-controller/index.html>
- Bosch Ballbona, J. (2000). Pedro Vilar, Claudi Perret, Gaspar Bruel and the background of the cathedral of Barcelona. *Locus amoenus*, 2000, núm. 5, p. 149-177.  
<https://www.google.com/url?sa=t&source=web&rct=j&url=https://www.router-switch.com/air-ap1562i-e-k9.html&ved=2ahUKEwjWuLfnmbztAhUAUhUIHWUqBWIQFjACegQIDBAB&usg=AOvVaw3eiwb9eTB1xN3njOCXXqpv>.
- Entertainmentbox, Vik. (2017, February 15). *X92 TV BOX ANDROID 6.0 stock firmware*
- Fruugo, *Xiaomi Mi Router 4a Gigabit Version 2.4ghz Wifi 300mbps Wifi....*[Xiaomi Mi Router 4a Gigabit Version 2.4ghz Wifi 300mbps Wifi Repeater | Fruugo ZA](#)

Special credits to: Mr. Ngini