

An IPv6 communication node

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I. INTRODUCTION

The internet keeps expanding, we live in an era of the IoT and already long ago, the familiar IPv4 reached its limits. IPv6 is not only designed to bring an increased address space, but higher network efficiency and reduced costs as well. Since the Belgian Defense is currently applying EoIP to the tactical network, the conversion to IPv6 is self-evident, because continuously working with IPv4 increases the complexity, considering more and more devices and services are using the Internet Protocol.

II. FIRST SECTION

An analysis of an IPv6-based packet-switched network will be given, bearing the questions in mind: “What is the impact of the conversion from IPv4 to IPv6?”, “What are the drawbacks of changing to IPv6?” and “Is it possible to establish an operating IPv6-based tactical network with all the services currently running within the Belgian Defense?”.

III. SECOND SECTION

A. *Redundancy implementation and VoIPv6*

Various methods will be shown to promote the redundancy in the network, which is especially essential in an operational environment. VoIPv6, combined with a signaling protocol, is discussed, bearing the previously asked questions of the first section in mind.

B. *QoS implementation and hardening*

Finally, QoS is addressed and several measurements, concerning the hardening of the network, will be mentioned.

IV. SOME REMARKS

EoIP: Everything over Internet Protocol

IoT: Internet of Things

IPv4: Internet Protocol version 4

IPv6: Internet Protocol version 6

QoS: Quality of Service

VoIPv6: Voice over Internet Protocol version 6

V. CONCLUSION

This thesis aims to give an answer to the questions if it is possible and advantageous to use IPv6 within an operational network, while maintaining the required services.

REFERENCES

- [1] 2LT candidate MISSOTTEN, R. (2016), *An EoIPv6 communication node*. Brussels: Belgian Defense.