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# Outcomes of the survey on space weather requirements

Dr Rendani Nndanganeni

*Space Weather Researcher (SANSA)*

*PTC MET Project 3*

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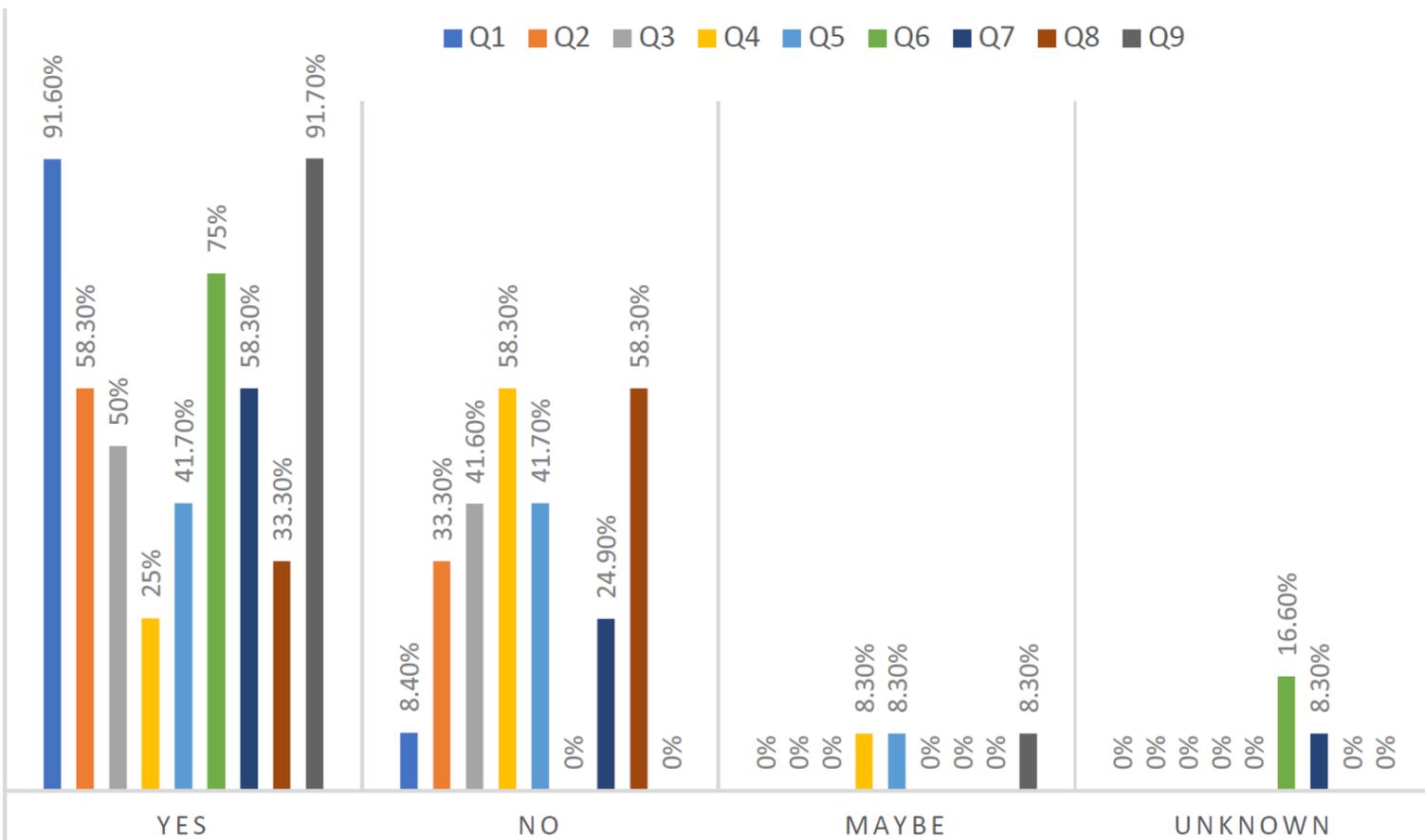


# SURVEY ANALYSIS

As part of the work of the APIRG sub-group IIM of APIRG, a questionnaire on space weather was sent to States. This questionnaire had to be completed and returned no later than June 18, 2021. Among all the states which were required to send back those questionnaires (except South Africa), only the twelf following ones have replied so far : Benin, Burkina Faso, Burundi, Gabon, Gambia, Madagascar, Mali, Mauritania, Ouganda, Senegal, Botswana and Zambia. The analysis of the survey is presented below :



# Results



- The great majority of the states are aware of the amendment 78 of Annex 3.
- The majority of the states are committed to support the provision of space weather information.
- Half of the states have nominated national agencies to assist with implementing the space weather information.
- A little more than half of the states have not undertaken a national assessment on the implementation on space weather.
- A little more than half of the states have systems to receive the space weather advisory information and disseminate it in IWXXM GML.
- The great majority of the states know that SANSa is the regional Space Weather Centre designated by ICAO.
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- The great majority of the states know that SANSa is the regional Space Weather Centre designated by ICAO.
- The majority of states have nominated experts to participate in Project 3.
- Most of the states have not assessed the risks that space weather poses to the local technological infrastructure.
- The great majority of the states are willing to receive training related to Space weather



## Technical question results

- The great majority of the states have knowledge about space weather.
- Most of the states know that space weather has impacts on aviation operations.
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- The great majority of the states use HF radio.
- Most of the states have not encountered incidents due to communications between ATC and Air traffic.
- All states use VHF and HF
- The great majority of the states have record of communication systems failures.
- The great majority of states have not re-routed nor cancelled flight due to navigation problems.
- Nearly all the states use VOR/DME, ILS, NDB as alternatives in case of GNSS/GPS failures.



## Technical question results continue...

- 40% of the states experience navigation errors on a year basis and 40% of the states experience them on a seasonal basis.
- The great majority of the states have record of instances when navigation systems failed.
- The great majority of the states do not assess pilots for radiation exposure.
- In the great majority of the states, pilots and crew members are not classified as occupational radiation workers.
- The great majority of the states know that aircrafts avionics can be affected by space weather.
- All the states are willing to receive educational training on space weather.



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