

Peer Review

Review of: "Upper Mid-Band Spectrum for 6G: Vision, Opportunity and Challenges"

Oday Bshara¹

1. Independent researcher

This paper presents valuable insights into the envisioned role of FR3 in 6G Integrated Sensing and Communication (ISAC), addressing both (1) technical challenges, such as the variability in channel characteristics across the wide FR3 band, and (2) regulatory challenges, including the need to coexist with incumbent users while minimizing interference and avoiding the need for user relocation. The current 3GPP FR3 channel modeling relies on sparse measurements across the 0.5–100 GHz spectrum, serving only as a coarse approximation. This underscores the necessity for more comprehensive and representative measurement campaigns to accurately characterize FR3 channels.

The authors effectively highlight the importance of spectrum agility, scalable numerology, and the beamforming challenges critical to achieving the joint goals of sensing and communication in 6G. Furthermore, the paper raises several open research questions that are essential for advancing toward a mature and deployable 6G ISAC framework.

Overall, I find the paper to be a valuable contribution and recommend it for publication. I have only a few minor corrections to suggest:

- **Abstract (Page 1):** The phrase “*never-before-used spectrum*” may be confusing, especially in the context of incumbent coexistence. Consider clarifying the application context to avoid ambiguity.
- **FR3 Channel Modeling (Page 5):** The reference to “above 24GHz (FR3)” is inaccurate and should be corrected to FR2.
- **FR3 Channel Modeling (Page 6):** The phrase “higher FR1” should likely be corrected to **lower FR1**.

Declarations

Potential competing interests: No potential competing interests to declare.