# Article information:

Design and Analysis of In-Band Full-Duplex Private 5G Networks Using FR2 Band | IEEE Journals & Magazine | IEEE Xplore  
<https://ieeexplore.ieee.org/abstract/document/9650901>

# Article summary:

1. This paper studies a solution for efficient industrial Internet of Things (IIoT) communications through an in-band full-duplex (IBFD) enabled private 5G network in frequency range 2 (FR2) band.

2. The proposed RF cancellation scheme addressed two key issues of extending current technologies to wideband operations in FR2 band: limited operational bandwidth and the requirement for a large number of cancellers.

3. A game theoretic user allocation algorithm is proposed to minimise co-channel interference (CCI) in a heterogeneous environment, and the performance of such IBFD private 5G network is evaluated in terms of bit error rate (BER) and spectral efficiency (SE).

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article provides a detailed overview of the design and analysis of an In-Band Full-Duplex Private 5G Network using FR2 Band, which is intended to be used for Industrial Internet of Things applications. The article presents a comprehensive description of the proposed solution, including analog and digital self-interference cancellation, game theory-based user allocation algorithms, flexible numerology, mini-slot, and self-contained subframes introduced in 5G NR.

The article appears to be reliable as it provides evidence for its claims with numerical results from simulations and theoretical calculations. It also cites relevant sources to support its arguments. However, there are some potential biases that should be noted. For example, the article does not explore any counterarguments or alternative solutions that could be used instead of the proposed one. Additionally, it does not discuss any possible risks associated with using this technology or present both sides equally when discussing its advantages and disadvantages. Furthermore, there is no mention of any promotional content or partiality towards any particular technology or company involved in this research project.

# Topics for further research:

* Industrial Internet of Things applications
* Self-interference cancellation techniques
* Game theory-based user allocation algorithms
* Flexible numerology in 5G NR
* Mini-slot and self-contained subframes
* Risks associated with In-Band Full-Duplex Private 5G Network

# Report location:

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