17-Mar-2025  
  
Paper:Sensors-86249-2025 Analysis and Experimental Validation of SSTDR for Simultaneous Distributed Diagnosis of Wire Networks  
Authors: Addad, Mouad; Djebbari, Ali; Benoit, Evan; Furse, Cynthia  
Editor: Dr. Nan Li  
  
Dear Furse,  
  
I am writing to you concerning the above referenced manuscript, which you submitted to the IEEE Sensors Journal.  
  
Based on the enclosed set of reviews this manuscript is not acceptable for publication in its current form, but may be acceptable after being thoroughly reworked. If you choose to resubmit, please send the reworked manuscript as soon as possible. The sooner we receive the resubmission, the better the likelihood that we can utilize the same editor and reviewers.  If an extension is needed for any reason, please contact Shivani Chauhan at [sensors-admin@ieee.org](mailto:sensors-admin@ieee.org) with an expected date for the resubmission.  
  
Your resubmitted manuscript will require an additional full round of review, but as stated above, we will make every effort to utilize the previous reviewers if possible.  Please be sure to mention the original paper number and include a point-by-point response to the reviewer comments in your cover letter and/or File Upload section.  
  
Additionally, as you revise the manuscript, please use the Track Changes feature of MS Word, or a similar method, to show the changes you have made.  The changes must be underlined or highlighted in the resubmitted manuscript.  This will expedite the re-review process.  
  
**PLEASE READ:**

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2. If you originally submitted via ScholarOne Manuscripts, please upload your files here: <https://mc.manuscriptcentral.com/sensors>

If you have any questions regarding the reviews or this decision, please contact me directly.  Any other support inquiries should be directed to Shivani Chauhan at [sensors-admin@ieee.org](mailto:sensors-admin@ieee.org).  
  
Thank you for considering IEEE Sensors Journal for publication of your work.  
  
Sincerely,  
  
Dr. Nan Li  
Associate Editor, IEEE Sensors Journal  
[nan.li@hotmail.co.uk](mailto:nan.li@hotmail.co.uk)  
  
<https://mc.manuscriptcentral.com/sensors>  
  
Review Comments:  
  
Reviewer: 1  
  
Recommendation: Publish in Minor, Required Changes (as noted in the Comments section. This rating may not be assigned for Sensors Letters.)  
  
Comments:  
Dear Author,  
  
Complex branched cable networks such as the ones found in aircrafts can indeed be installed in harsh environment, which may result in cable defects subsequently leading to critical failure.  
Reflectometry is therefore a good way to monitor them, and improving old techniques like TDR / distributed TDR is thus always welcome and this makes your motivation really clear.  
When I read your paper, it gave me an impression of "déjà vu" and I quickly found out why: you submitted a very similar manuscript (An Enhanced Method for the Distributed Diagnosis of Wire Networks, M. Addad & al.) in 2022.  
But your work is now far more complete than it was 2 years ago because you added a whole new experimental validation section, which is greatly appreciated.  
I found answers to most of questions I had at the time, except these 3 points which still remain:  
- eq. (3): P is missing (upper bound of the sum)  
- eq. (7): it should be s'\_{i,m} instead of s\_{i,m}  
- eq. (14): it should be \delta\_{l-l\_p} instead of \delta\_{l-p}  
On the downside, I still think you should have cited [1] (I would like to point out I am not one of the authors), because it has been available for more than 15 years and already provides answers to most of the issues your method was designed to address.  
Your main contribution was to replace M/Gold Sequence by ZCZ, but the rest is quite similar.  
  
[1] Distributed Reflectometry-based Diagnosis for Complex Wired Networks, N. Ravot & al. (2007)

>>EMPHASIS ON NOVELTY let’s also add other distributed network references (basically expand references)… emphasize (1) there are many applications where this is needed, and many algorithms for evaluating the network once data has been acquired , (2) there is a need for ideally orthogonal codes if network is tested simultaneously … several codes have bene proposed … (including [1] above and our [2])  
  
Best regards,  
  
Additional Questions:  
1. Is the paper technically sound? If no, why not?: Yes  
  
2. Is the coverage of the topic sufficiently comprehensive and balanced?: Yes  
  
3. How would you describe the technical depth of the paper?: Appropriate for the generally knowledgeable individual Working in the Field or a Related Field  
  
4. How would you rate the technical novelty of the paper?: Not novel  
  
1. Is the topic appropriate for publication in these transactions?: Yes  
  
2. Is the topic important to colleagues working in the field?: Yes  
  
1. How would you rate the overall organization of the paper?: Satisfactory  
  
2. Are the title and abstract satisfactory?: Yes  
  
title and abstract explanation:  
  
3. Is the length of the paper appropriate? If not, recommend how the length of the paper should be amended, including a possible target length for the final manuscript.: Yes  
  
length of the paper recommendation:  
  
4. Are symbols, terms, and concepts adequately defined?: Yes  
  
5. How do you rate the English usage?: Satisfactory  
  
6. Rate the Bibliography?: Unsatisfactory  
  
1. How would you rate the technical contents of the paper?: good  
  
2. How would you rate the novelty of the paper?: not novel  
  
3. How would you rate the "literary" presentation of the paper?: totally accessible  
  
4. How would you rate the appropriateness of this paper for publication in this IEEE Transactions?: good match  
  
If you are suggesting additional references they must be entered in the text box provided. All suggestions must include full bibliographic information plus a DOI. **Please note: requiring primarily one’s own papers to be cited is considered to be citation coercion, an ethically questionable practice according to IEEE Publication Services and Products Board Operations Manual. It also violates the reviewer’s anonymity.** : Distributed Reflectometry-based Diagnosis for Complex Wired Networks, N. Ravot & al. (2007)  
  
Would you recommend this paper for a Best Paper Award?: No  
  
  
Reviewer: 2  
  
Recommendation: Review Again After Resubmission (Paper is not acceptable in its current form, but has merit. A major rewrite is required. Author should be encouraged to resubmit a rewritten version after the changes suggested in the Comments section have been completed.)  
  
Comments:  
Time Domain Reflectometry (SSTDR). By evaluating the pseudo-noise zero

correlation zone, it enables simultaneous distributed testing. The work is particularly

interesting in the context of simultaneous distributed testing. However, I recommend the

following revisions before the paper can be considered for publication:

1. In the abstract, please include performance metrics (e.g., maximum length) to

help readers evaluate the work more easily. >> yes (and intro/concl)

2. In Section 2, Equation (6) introduces a cross-correlation function that is used to

derive Equation (3) and eliminate noise signals. Please provide a detailed explanation of

the reasoning behind this process. >> rewrite with changes on that shows at least a small change in most paragraphs

3. Ensure that all figures include units on the y-axis.

4. The paper employs a test signal amplitude of 62.5 mV. Please discuss whether

using different amplitudes would affect the testing results. Additionally, determine whether

the test signal is a pulse signal and provide the relevant signal details. If it is a pulse signal,

specify its pulse width and explain whether the pulse width impacts the test.

5. In Figure 3 (experimental setup), please provide additional details regarding the

signal source, sensing component, and demodulation process.

6. Include a comparative table that lists and compares the proposed method with

other related work. >>> table (section II or discussion)  
  
Additional Questions:  
1. Is the paper technically sound? If no, why not?:  
  
2. Is the coverage of the topic sufficiently comprehensive and balanced?:  
  
3. How would you describe the technical depth of the paper?:  
  
4. How would you rate the technical novelty of the paper?:  
  
1. Is the topic appropriate for publication in these transactions?:  
  
2. Is the topic important to colleagues working in the field?:  
  
1. How would you rate the overall organization of the paper?:  
  
2. Are the title and abstract satisfactory?:  
  
title and abstract explanation:  
  
3. Is the length of the paper appropriate? If not, recommend how the length of the paper should be amended, including a possible target length for the final manuscript.:  
  
length of the paper recommendation:  
  
4. Are symbols, terms, and concepts adequately defined?:  
  
5. How do you rate the English usage?:  
  
6. Rate the Bibliography?:  
  
1. How would you rate the technical contents of the paper?: good  
  
2. How would you rate the novelty of the paper?: slightly novel  
  
3. How would you rate the "literary" presentation of the paper?: mostly accessible  
  
4. How would you rate the appropriateness of this paper for publication in this IEEE Transactions?: good match  
  
If you are suggesting additional references they must be entered in the text box provided. All suggestions must include full bibliographic information plus a DOI. **Please note: requiring primarily one’s own papers to be cited is considered to be citation coercion, an ethically questionable practice according to IEEE Publication Services and Products Board Operations Manual. It also violates the reviewer’s anonymity.** : na  
  
Would you recommend this paper for a Best Paper Award?:  
  
  
Reviewer: 3  
  
Recommendation: Review Again After Resubmission (Paper is not acceptable in its current form, but has merit. A major rewrite is required. Author should be encouraged to resubmit a rewritten version after the changes suggested in the Comments section have been completed.)  
  
Comments:  
This paper presents and experimental validation of  
SSTDR for simultaneous distributed diagnosis of wire networks. However, the serous concerns needs to improve the content of the paper?  
1- What is the novelty of the paper? the sate of the art mechanisms are not added and discussed and the number of references is not sufficient >> addressed as for reviewer1  
2- Please mention the number of equations in the content of paper >>slight rewrites as for reviewer 2  
3-Why do you choose PN and ZCZ codes? the motivation is not clear in paper. >>emphasize (and table)  
4- The conclusion Section needs to be summarized and the equation shou >> yes  
  
Additional Questions:  
1. Is the paper technically sound? If no, why not?: No (explain)  
  
2. Is the coverage of the topic sufficiently comprehensive and balanced?: Some topics are significantly overstressed.  
  
3. How would you describe the technical depth of the paper?:  
  
4. How would you rate the technical novelty of the paper?: Somewhat novel  
  
1. Is the topic appropriate for publication in these transactions?: Perhaps  
  
2. Is the topic important to colleagues working in the field?: Moderately  
  
1. How would you rate the overall organization of the paper?: Could be improved  
  
2. Are the title and abstract satisfactory?:  
  
title and abstract explanation: Please add the novelty and also the results improvement to the abstract  
  
3. Is the length of the paper appropriate? If not, recommend how the length of the paper should be amended, including a possible target length for the final manuscript.: Yes  
  
length of the paper recommendation:  
  
4. Are symbols, terms, and concepts adequately defined?: Not always  
  
5. How do you rate the English usage?: Needs improvement  
  
6. Rate the Bibliography?: Unsatisfactory  
  
1. How would you rate the technical contents of the paper?: fair  
  
2. How would you rate the novelty of the paper?:  
  
3. How would you rate the "literary" presentation of the paper?: inaccessible  
  
4. How would you rate the appropriateness of this paper for publication in this IEEE Transactions?: weak match  
  
If you are suggesting additional references they must be entered in the text box provided. All suggestions must include full bibliographic information plus a DOI. **Please note: requiring primarily one’s own papers to be cited is considered to be citation coercion, an ethically questionable practice according to IEEE Publication Services and Products Board Operations Manual. It also violates the reviewer’s anonymity.** : n/a  
  
Would you recommend this paper for a Best Paper Award?: No