















## VI. CONCLUSION

Using ZDiff, our prototype implementation of a difference-based compression scheme, together with DSProxy, a SOAP proxy overlay, we demonstrated significant compression rate improvements for small SOAP messages. Tests using random generated messages show that ZDiff's compression efficiency changes with the distribution and amount of changes between messages. Our implementation performed better than standard lossless data compression (Zlib), as well as the specialized, high performance XML compression standard EXI, yielding significantly smaller message sizes for most tests. For very small messages (1100 bytes), ZDiff performed 5.3 times better than Zlib, and 3.6 times better than EXIficient. Because ZDiff restores an exact copy of the received message, it works well with security standards such as WS-Security and digital signatures. Such messages are also ideal for diff-based compression, achieving compression ratios as high as 1:40. While requiring slightly more processing time per message, we argue that this is an acceptable tradeoff for enabling standards-based publish/subscribe in disadvantaged grids on the tactical level.

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