Towards a Reference Methodological Framework for processing of Mobile Network Operator data for Official Statistics

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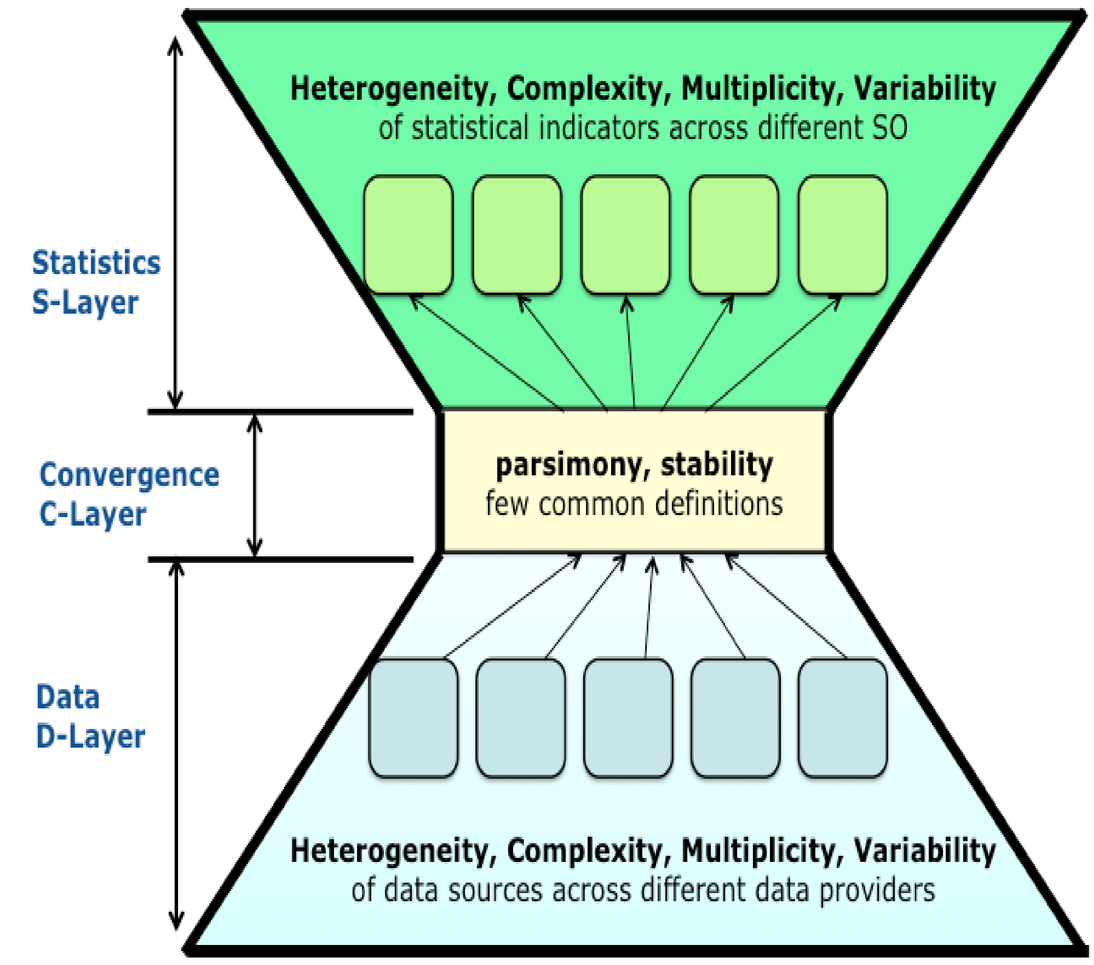
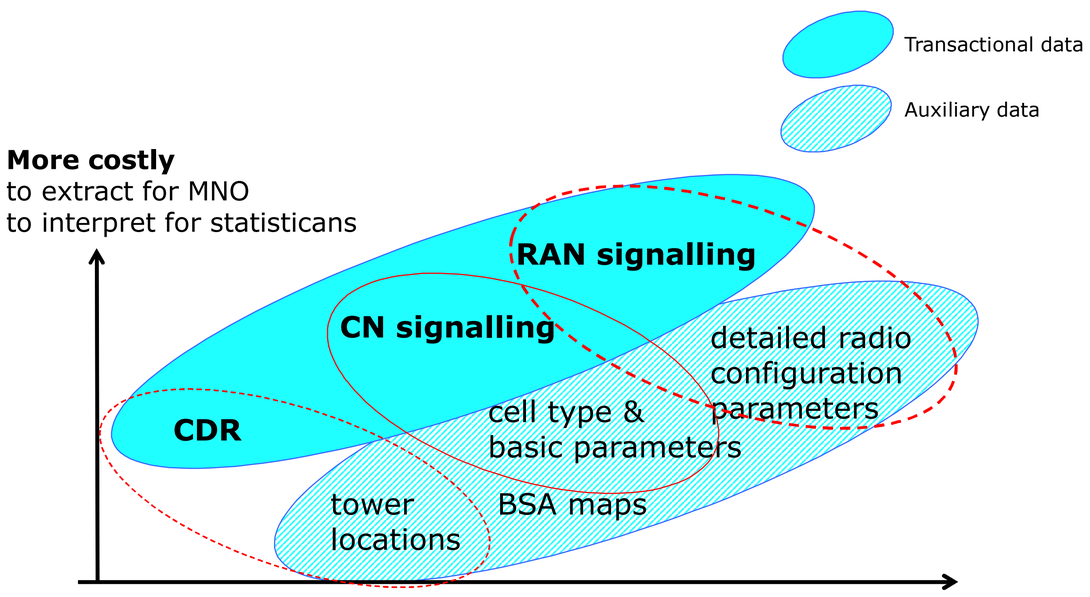


We propose a general **Reference Methodological Framework (RMF)** intended to facilitate the use of Mobile Network Operator (MNO) in general, including signalling data, for Official Statistics.

Why? Signalling data are more costly to extract and more complex to interpret than CDR. Furthermore, they yield a higher degree of heterogeneity across different MNOs. It is difficult for statisticians and researchers without a solid telco engineering background to interpret and manipulate such data directly. Furthermore, their format and semantic changes, following the evolution of MNO infrastructure.

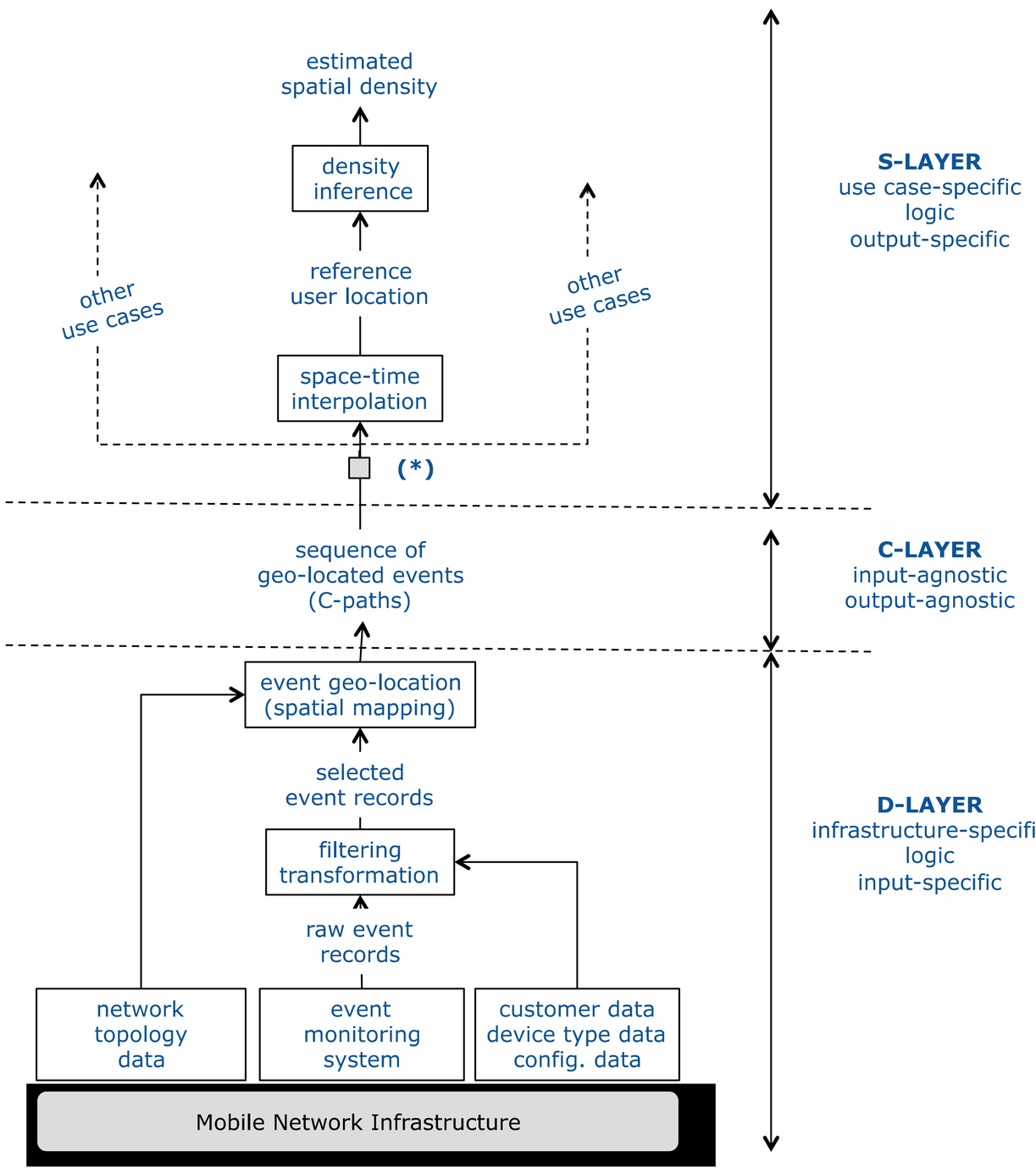


CN: Core Network
RAN: Radio Access Network
BSA: Best Service Area

The RMF is inspired by the principles of modularity, functional layering and the "hourglass model" that lie at the foundation of modern computer network architectures.

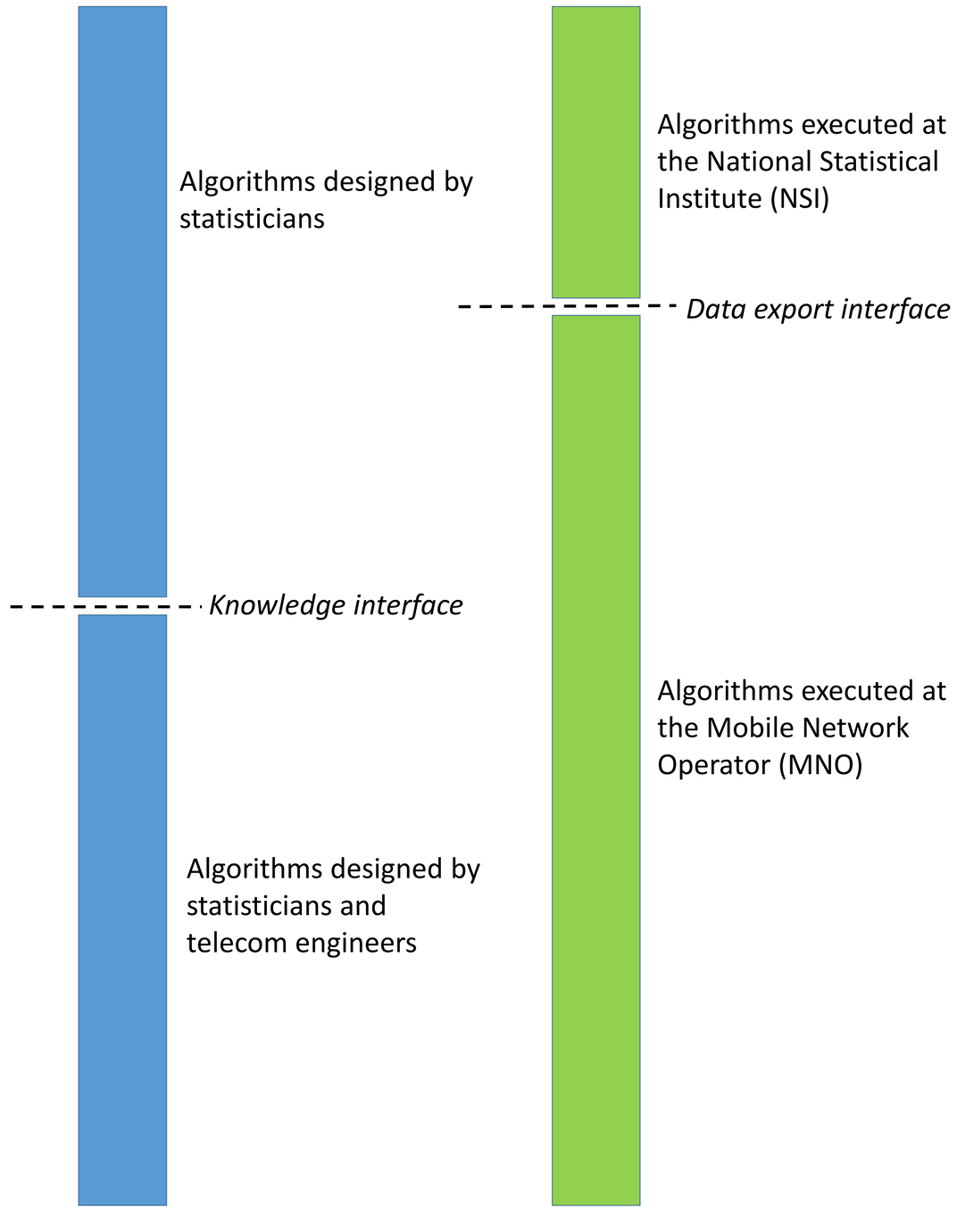
The functional modularity of the RMF agrees with the current international statistical production standards such as the GSBPM. Thus, it paves the way for a natural combination of diverse data sources in an integrated production framework.

Modular structure of the density estimation procedure



Development

Production



References

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F. Ricciato, G. Lanzieri and A. Wirthmann Towards a methodological framework for estimating present population density from mobile network operator data, 2019 https://tinyurl.com/yyo8c8pb