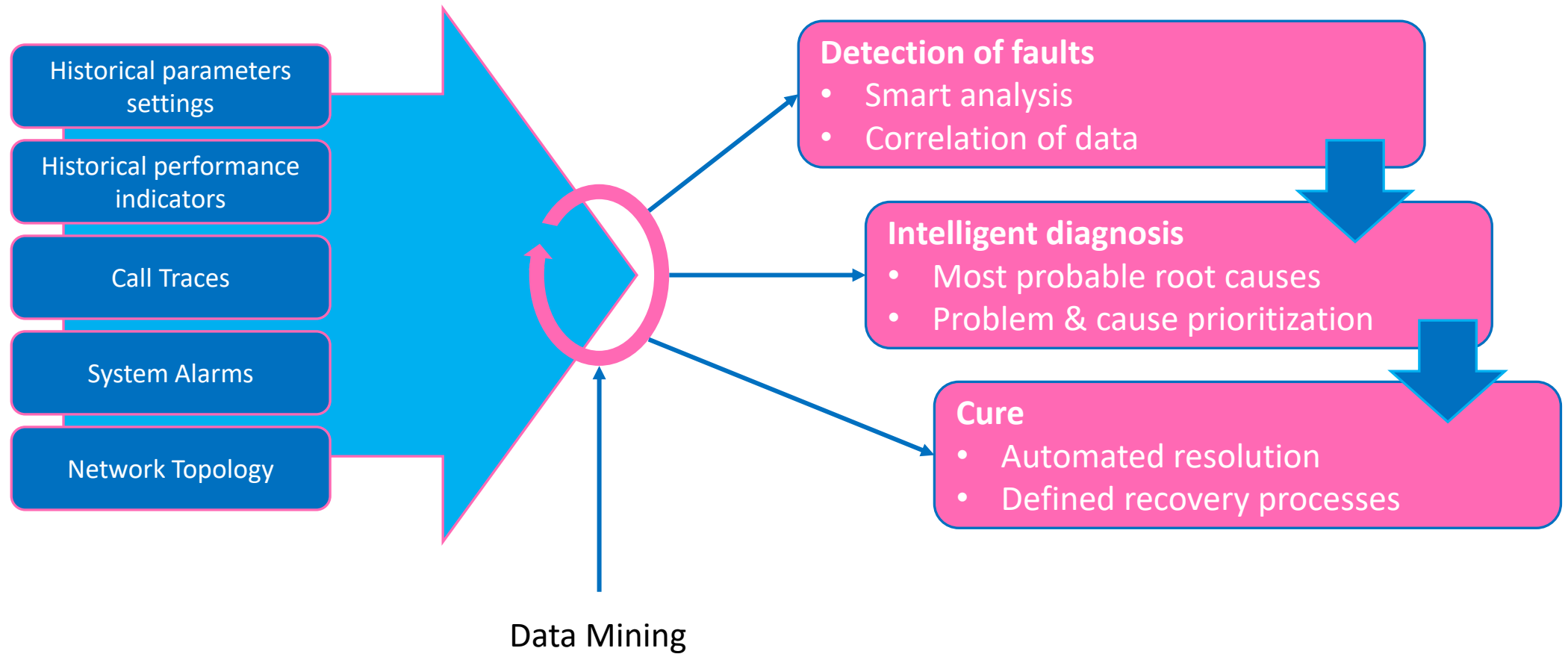


3GPP SON Series:
Cell Outage Detection and Compensation
(*COD & COC*)



Self-Healing Process

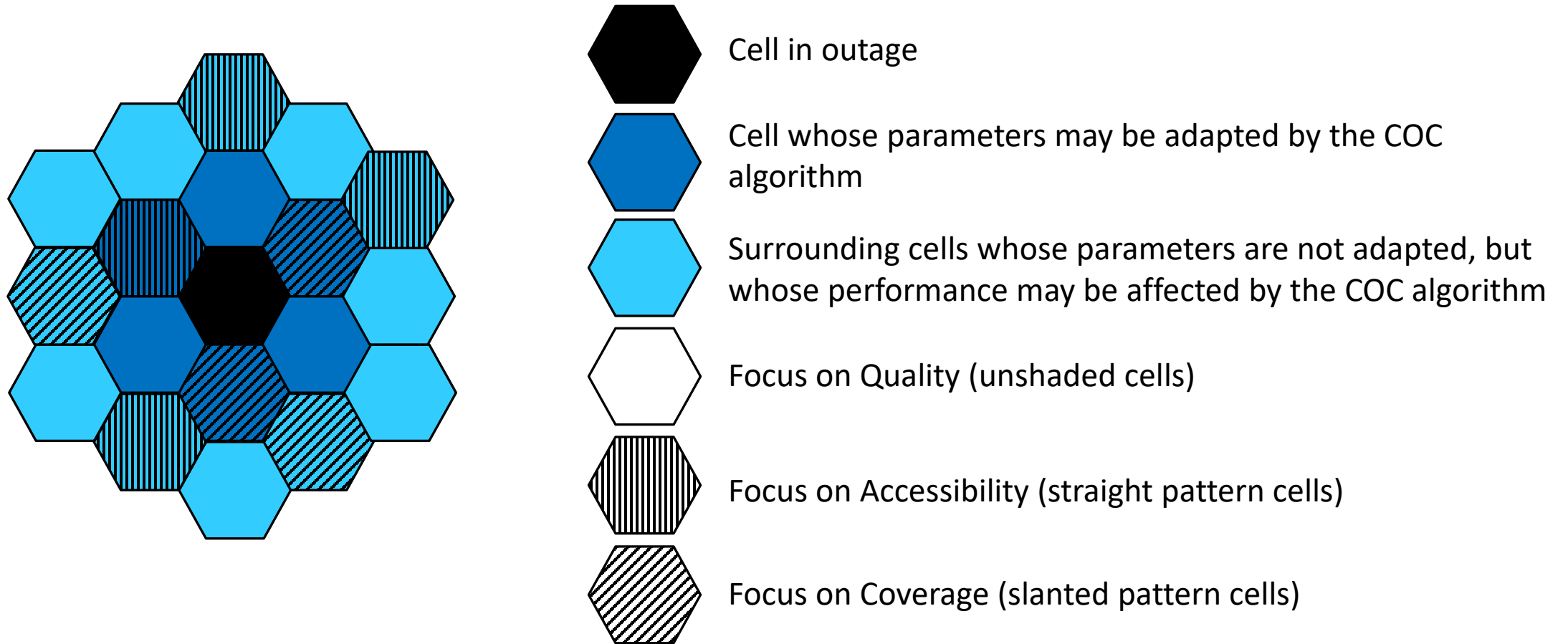


Based on Reference [2]

Cell Outage Management (COM)

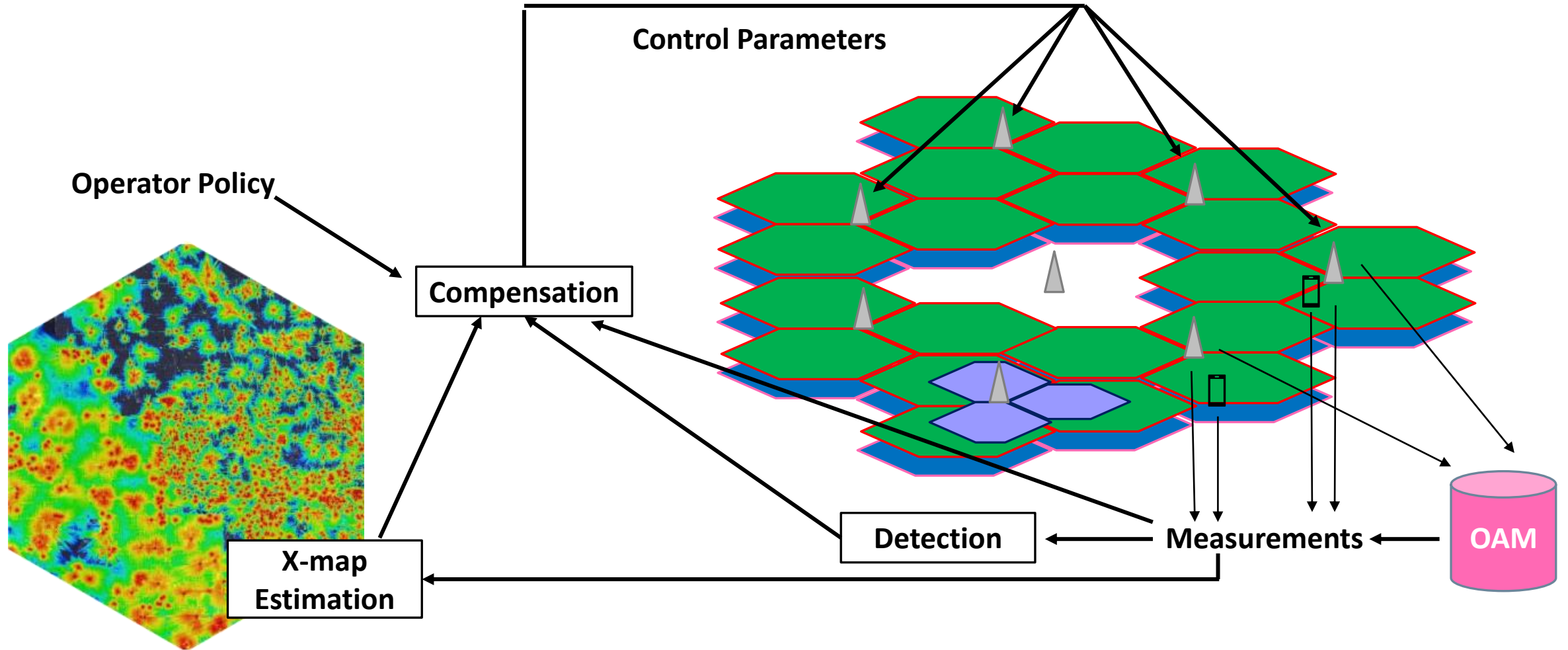
- Cell Outage Detection and Compensation provides automatic mitigation of eNB failures especially in the case where the eNB equipment is unable to recognize being out of service and has therefore failed to notify OAM of the outage. Detection and Compensation are two distinct cases that cooperate to provide a complete solution:
 - **Cell Outage Detection (COD)** typically combines multiple separate mechanisms to determine whether an outage has occurred. This is needed to detect the latent fault case, often described as “Sleeping Cell”, where OAM is unaware of the issue.
 - **Cell Outage Compensation (COC)** techniques are generally only applied after standard soft recovery techniques have failed to restore normal service.

COM Affected Cells



Based on Reference [1]

COM Components



Based on Reference [1]

References and Further Reading

- Cell Outage Management in LTE Networks by Amirijoo, M. & Jorguseski, Ljupco & Kürner, Thomas & Litjens, Remco & Eden, Michaela & Schmelz, Lars & Turke, U ([link](#))
- Self-Organizing Networks: Self-Planning, Self-Optimization and Self-Healing for GSM, UMTS and LTE, edited by Juan Ramiro and Khalid Hamied ([link](#))
- Self Organizing Networks for 3GPP LTE by Aderemi A. Atayero, Oluwadamilola I. Adu and Adeyemi A. Alatishe ([link](#))
- From 4G to 5G: Self-organized Network Management meets Machine Learning by Jessica Moysen and Lorenza Giupponi ([link](#))
- 3G4G: Self-Organizing Networks / Self-Optimizing Networks ([link](#))
- The 3G4G Blog: SON ([link](#))

Thank You

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