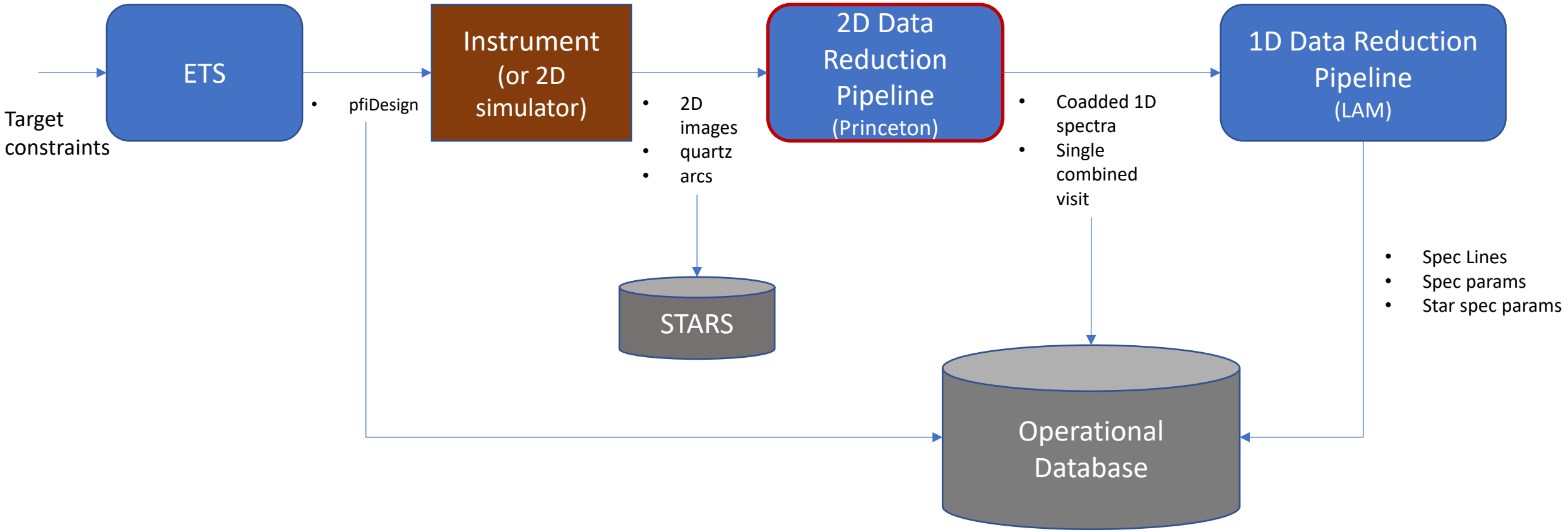
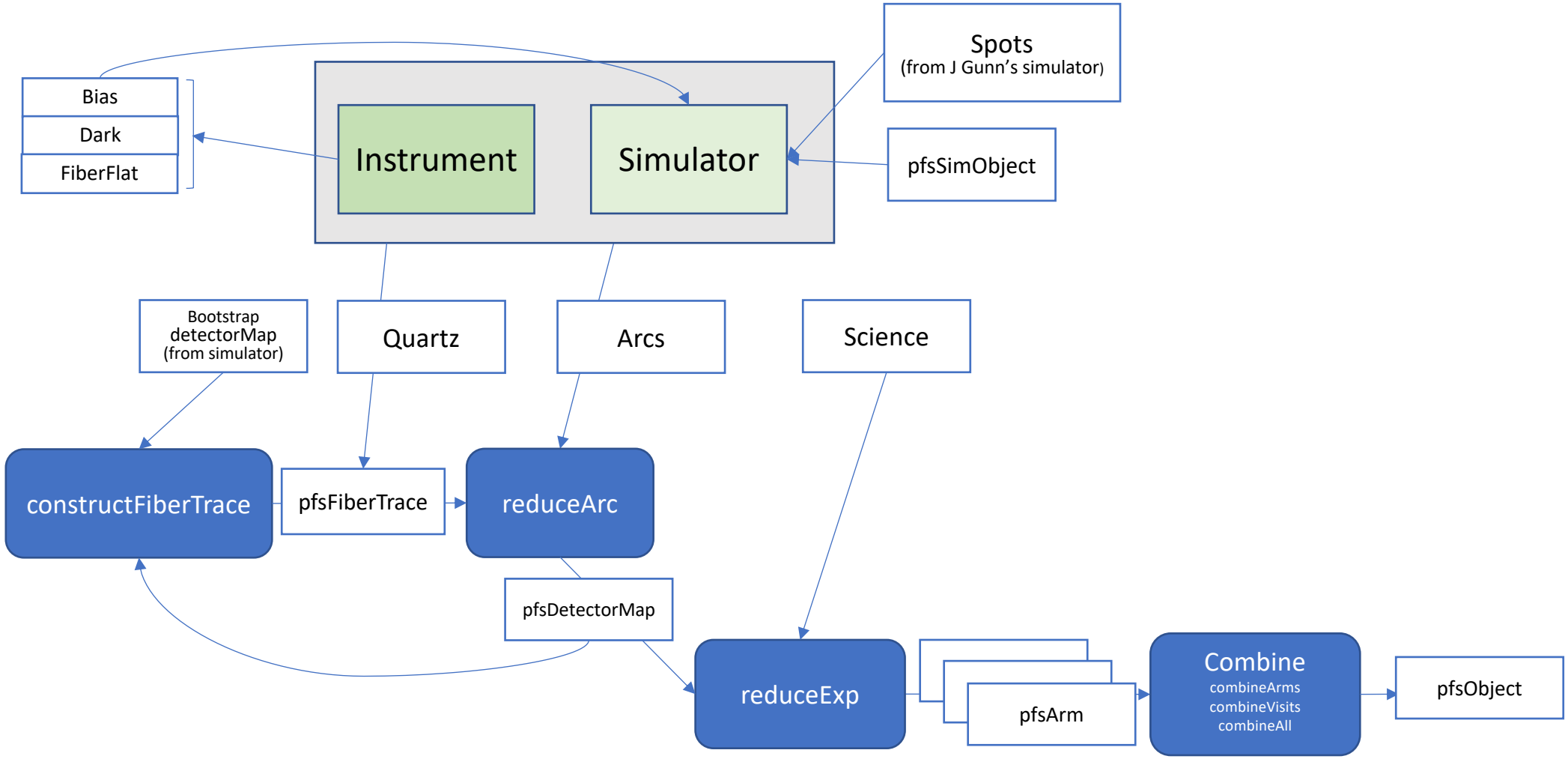
2D DRP Pipeline Plan

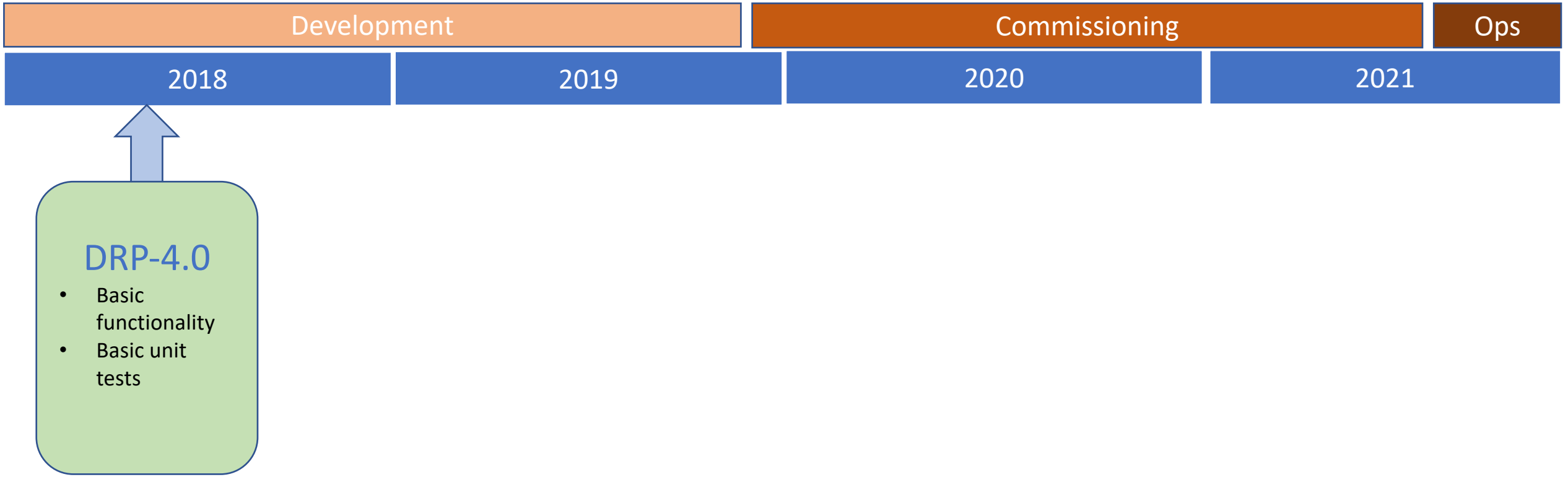
Hassan Siddiqui, Paul Price, Robert Lupton, Craig Loomis

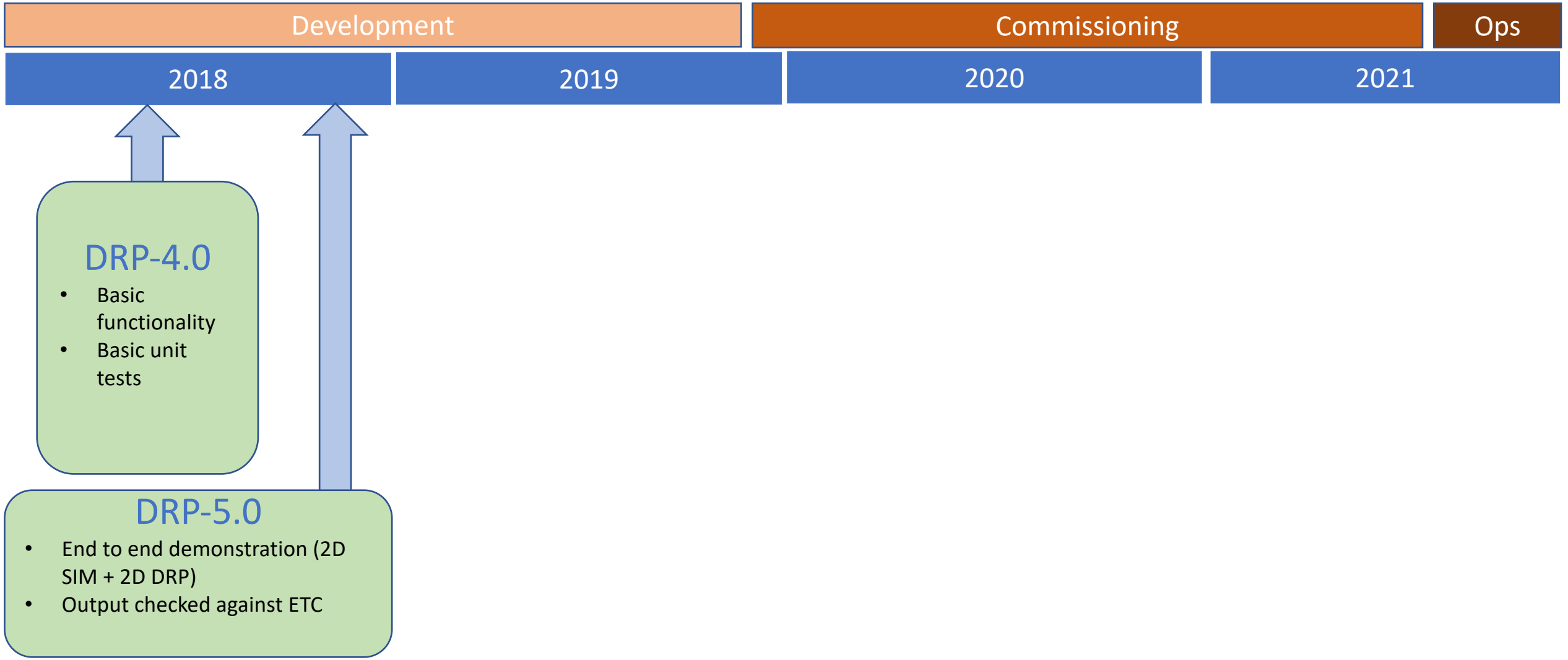
Princeton University

Data reduction schematic




Bias
Dark
FiberFlat
Instrument
Simulator
Spots
(from J Gunn's simulator)
pfsSimObject
Bootstrap
detectorMap
(from simulator)
Quartz
Arcs
Science
constructFiberTrace
pfsFiberTrace
reduceArc
pfsDetectorMap
reduceExp
pfsArm
Combine
combineArms
combineVisits
combineAll
pfsObject


Development
Commissioning
Ops
2018
2019
2020
2021
DRP-4.0
Basic functionality
Basic unit tests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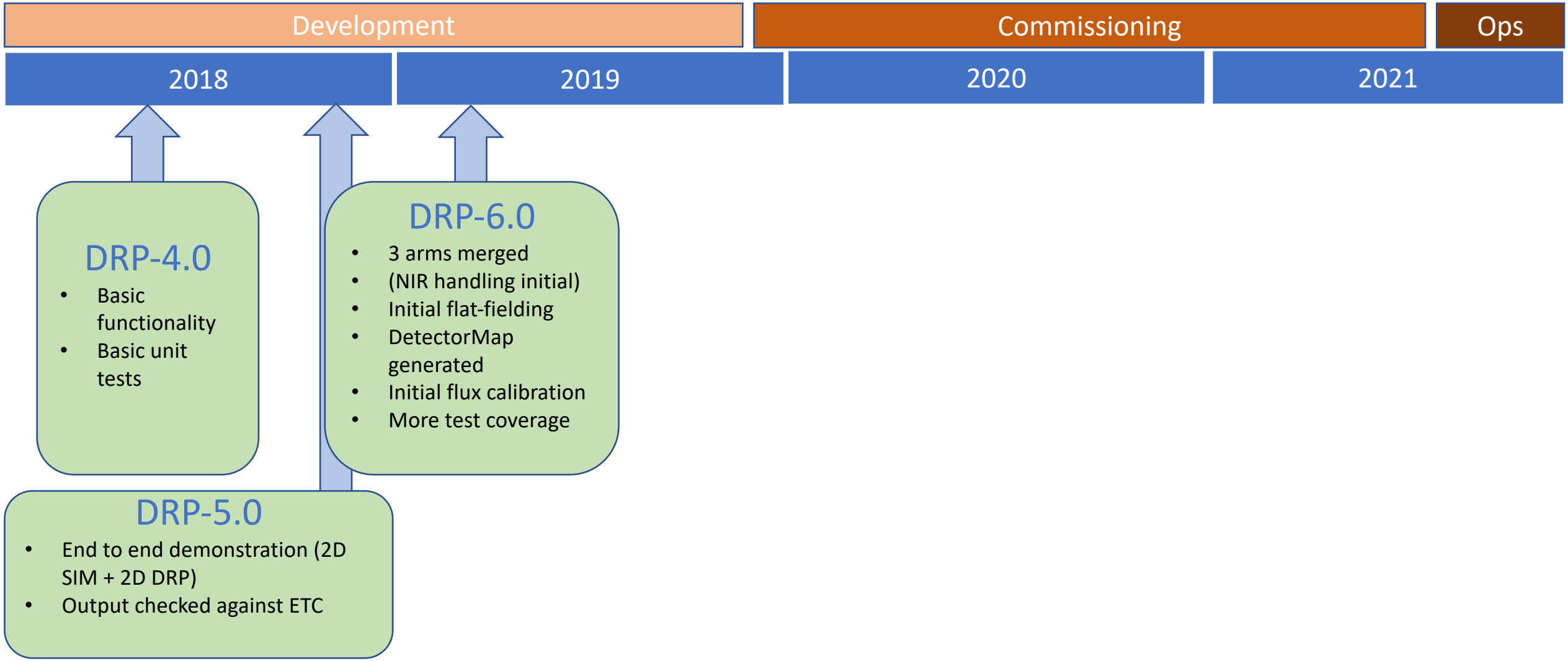
DRP-5.0
End to end demonstration (2D SIM + 2D DRP)
Output checked against ETC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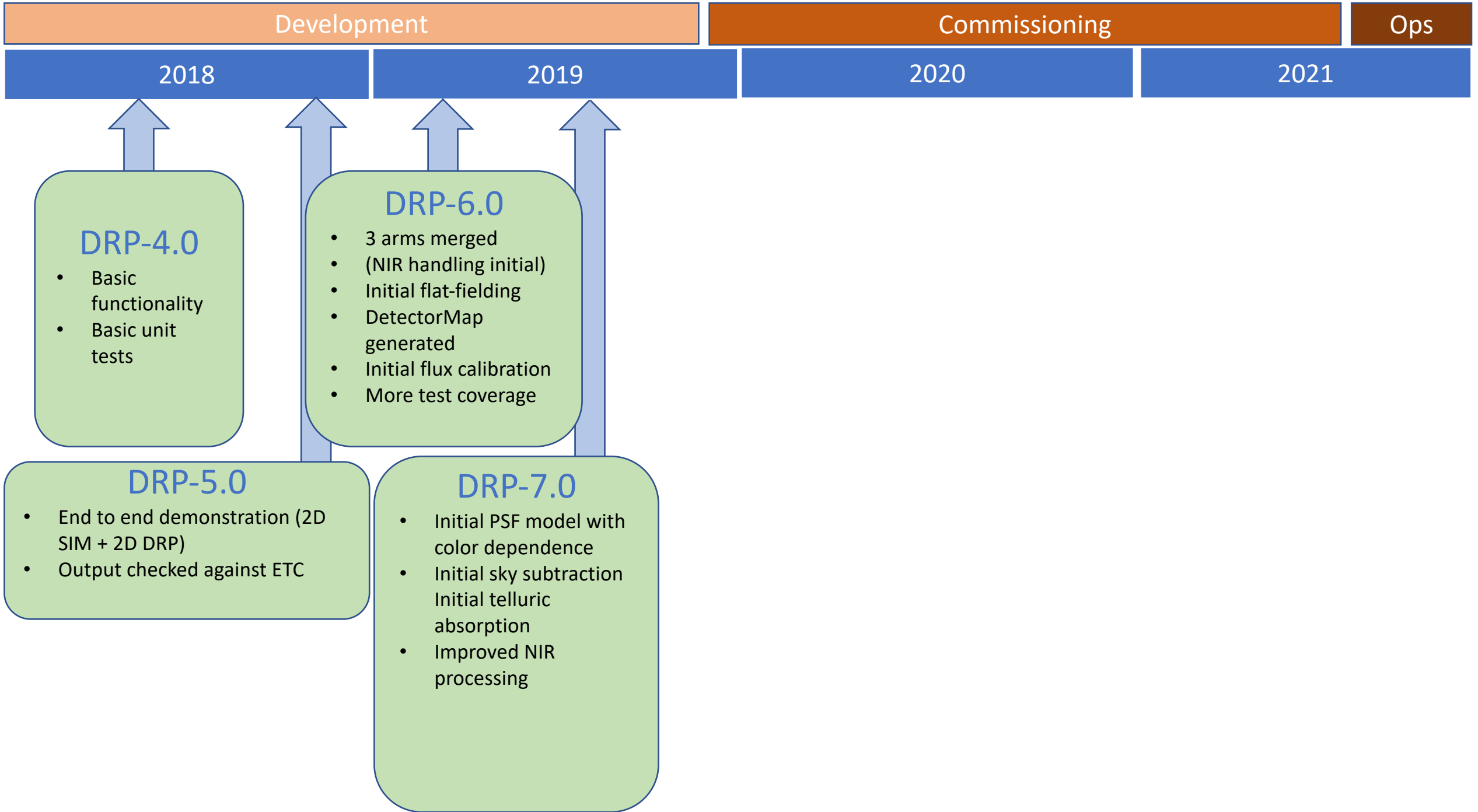
DRP-4.0
Basic functionality
Basic unit tests
DRP-6.0
3 arms merged
(NIR handling initial)
Initial flat-fielding
DetectorMap generated
Initial flux calibration
More test coverage
DRP-5.0
End to end demonstration (2D SIM + 2D DRP)
Output checked against ETC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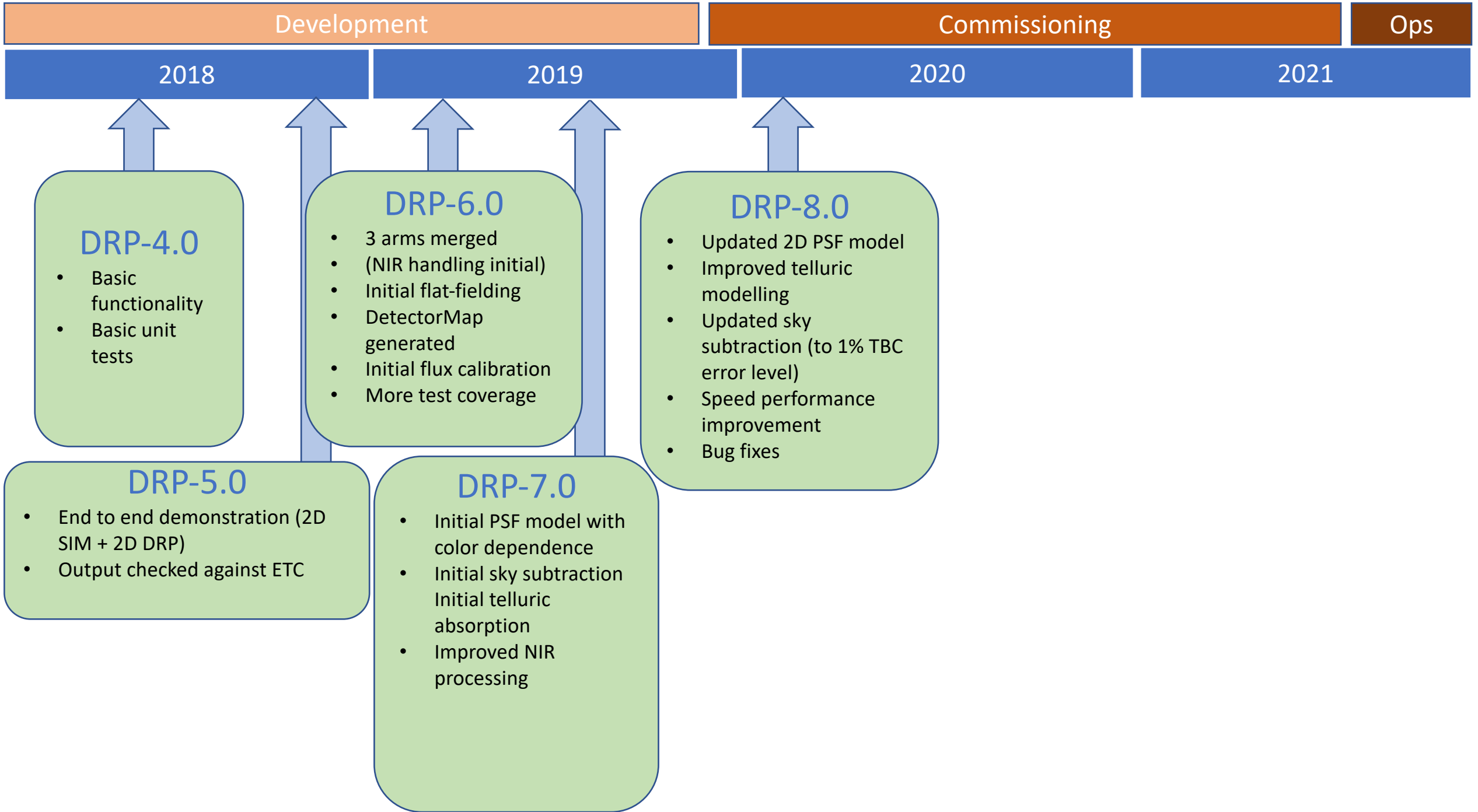
DRP-7.0
Initial PSF model with color dependence
Initial sky subtraction
Initial telluric absorption
Improved NIR processing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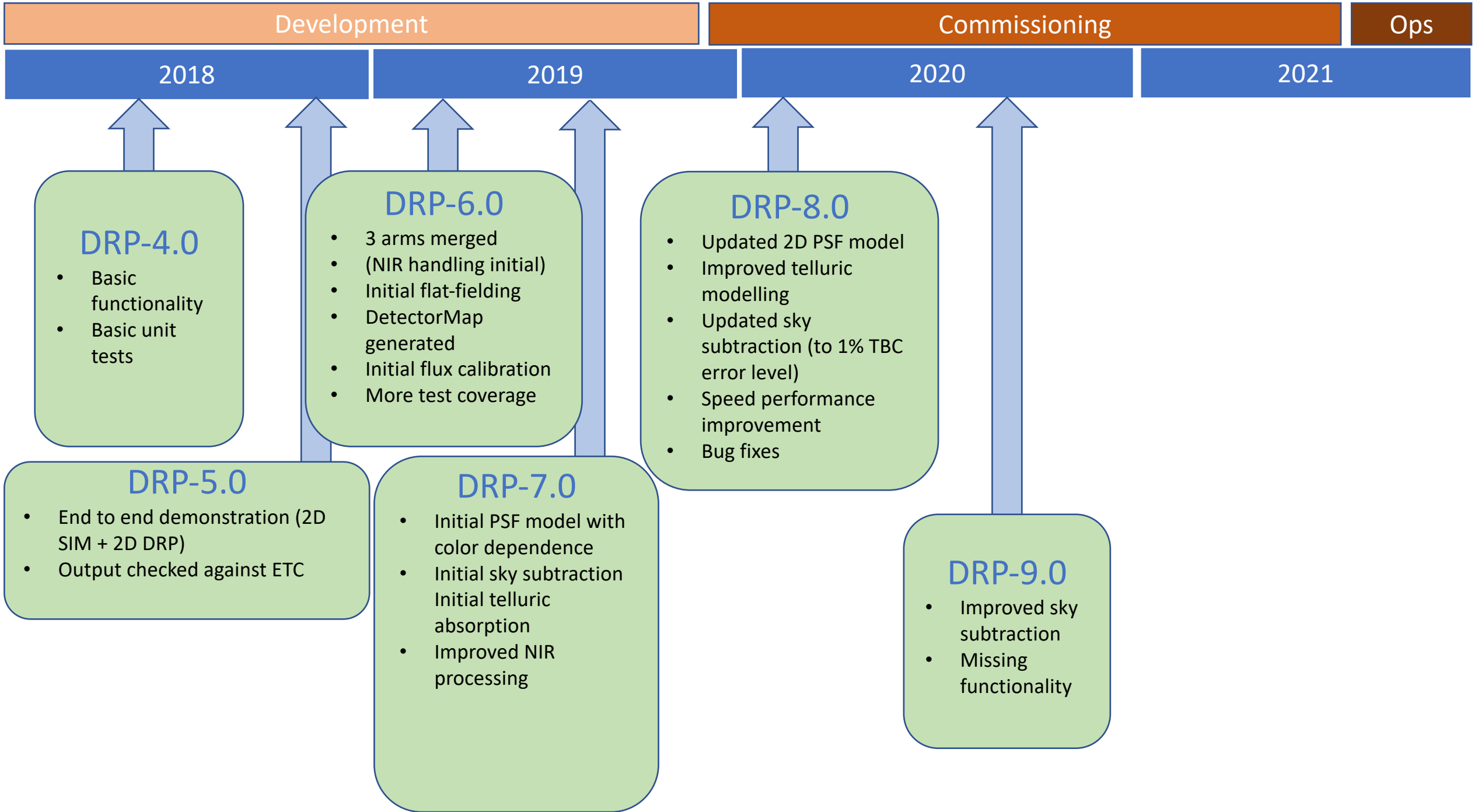
Improved NIR processing
DRP-8.0
Updated 2D PSF model
Improved telluric modelling
Updated sky subtraction (to 1% TBC error level)
Speed performance improvement
Bug fixes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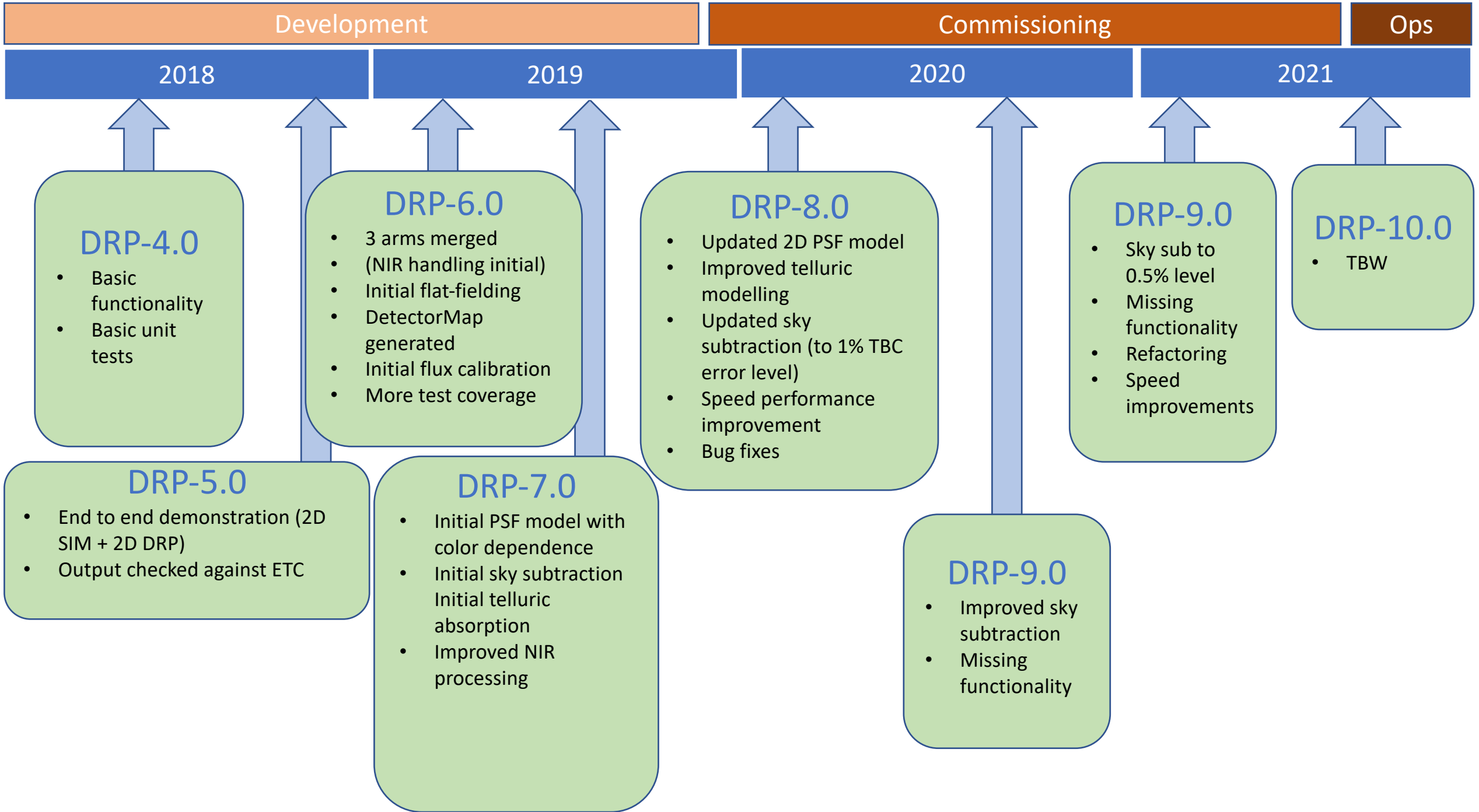
DRP-9.0
Improved sky subtraction
Missing functionality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DRP-9.0
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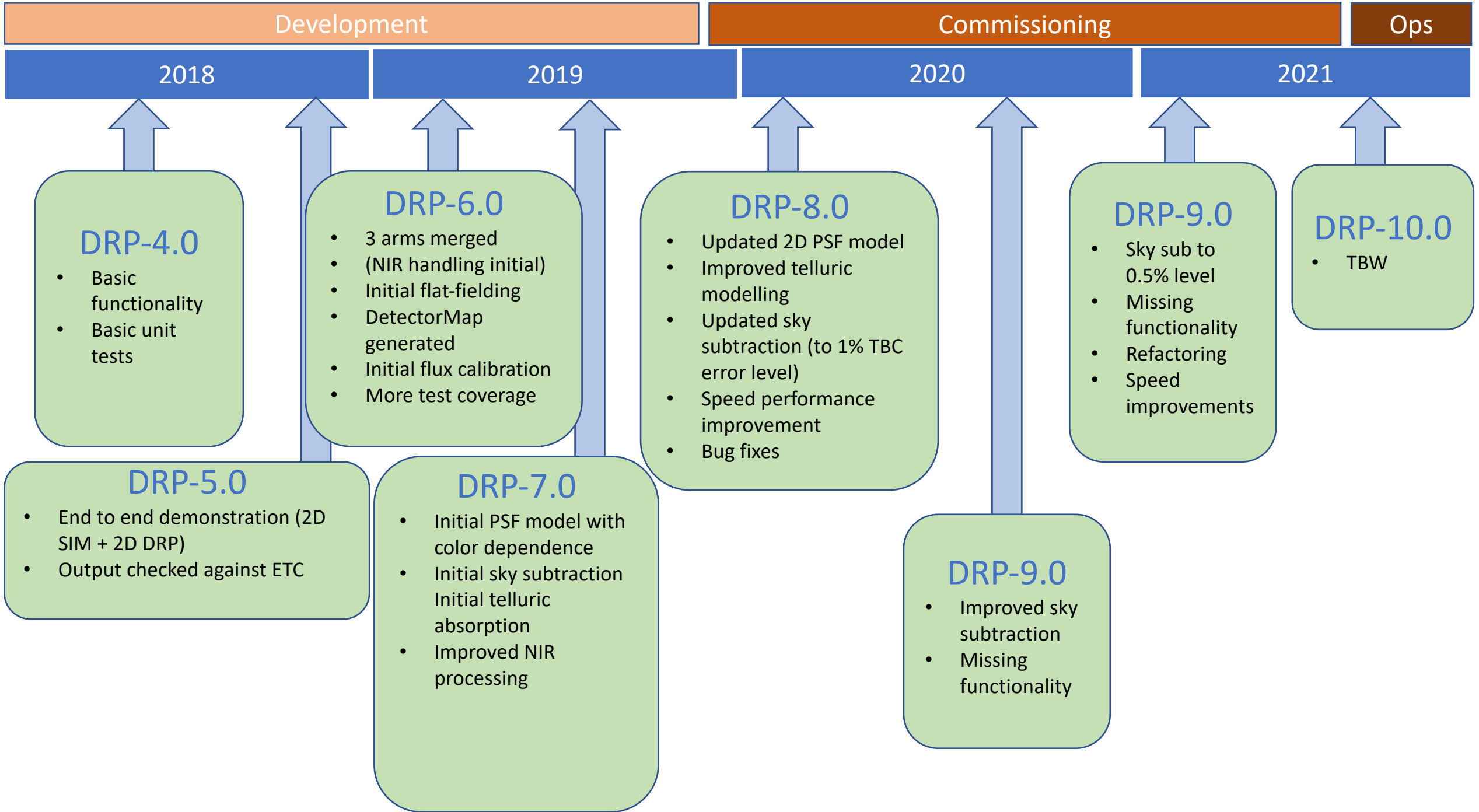
Missing functionality
DRP-9.0
Sky sub to 0.5% level
Missing functionality
Refactoring
Speed improvements
DRP-10.0
TBW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DRP-10.0
TBW

Personnel

- Paul Price (infrastructure, flux calibration and algorithms)
- Neven Caplar (2D PSF modelling)
  - *Limited availability Feb-Mar 2019*
- Keigo Nakamura (2D sky subtraction)
  - *New developer – needs time to familiarize himself (ready ~Mar 2019)*
- Sogo Mineo, Naoki Yasuda and Masayuki Tanaka (1D sky subtraction and flux calib)
- Craig Loomis (general) [20% FTE]
- Robert Lupton (general) [10%]
- Hassan Siddiqui (algorithms) [20%]