OOKAMI PROJECT APPLICATION

Date: **June 23, 2022**

Project Title: Porting raxml-ng to ARM

Usage: Testbed

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Usage Description:
- Porting and benchmarking maximum likelihood phylogenetic inference tool raxml-ng (https://github.com/amkozlov/raxml-ng) on ARM
- Development and benchmarking of SVE kernels for the phylogenitc likelihood library coraxlib (https://codeberg.org/Exelixis-Lab/coraxlib)

Computational Resources:

Total node hours per year: < 15.000

Size (nodes) and duration (hours) for a typical batch job:
1-2 nodes x 4-8 hours

Disk space (home, project, scratch): 30GB / 1TB / 1TB

Personnel Resources (assistance in porting/tuning, or training for your users**):**
None anticipated

Required software:
- Cmake
- bison
- flex
- GoogleTest (optional)

If your research is supported by US federal agencies:

Agency: N/A

Grant number(s): N/A

Production projects:

Production projects should provide an additional 1-2 pages of documentation about how
(a) the code has been tuned to perform well on A64FX (ideally including benchmark data comparing performance with other architectures such as x86 or GPUs)
(b) it can make effective use of the key A64FX architectural features (notably SVE, the high-bandwidth memory, and NUMA characteristics)
(c) it can accomplish the scientific objectives within the available 32 Gbyte memory per node