

High Performance Computing Data format generator

Pierre Aubert, Thomas Vuillaume, Florian Gaté,
Jean Jacquemier, Gilles Maurin, Nahid Emad,
Giovanni Lamanna

High Performance Computing

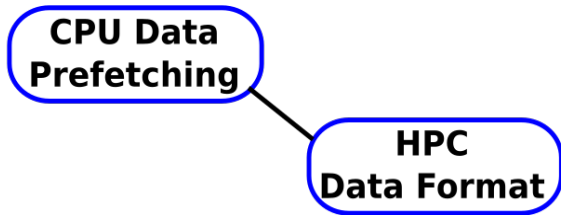
Get the best performances



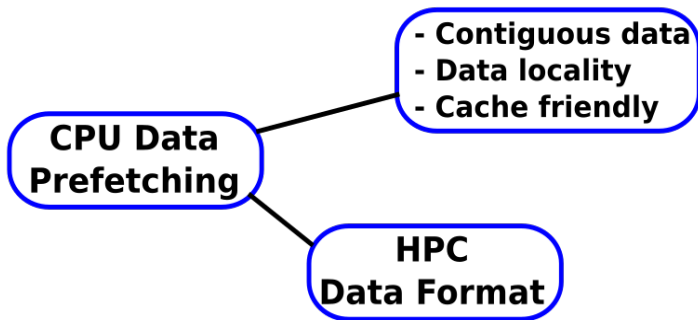
Data format for HPC ?

**HPC
Data Format**

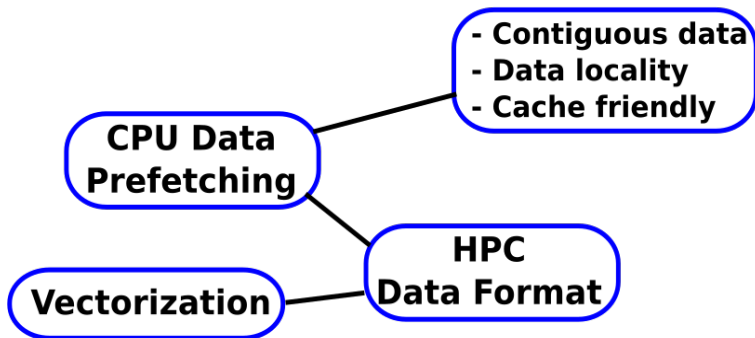
Data format for HPC ?



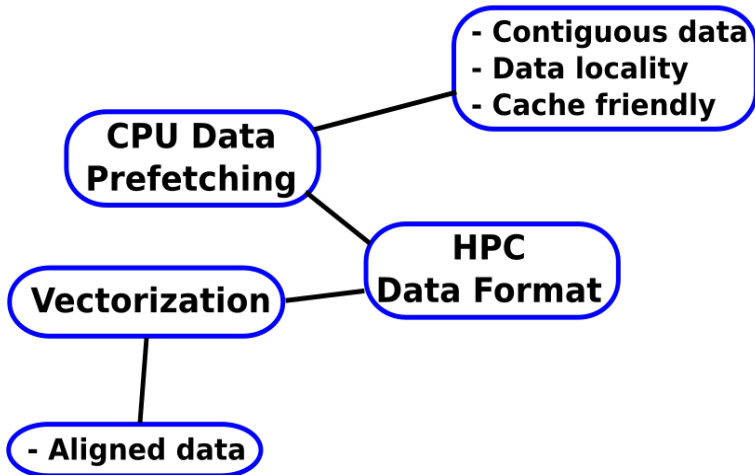
Data format for HPC ?



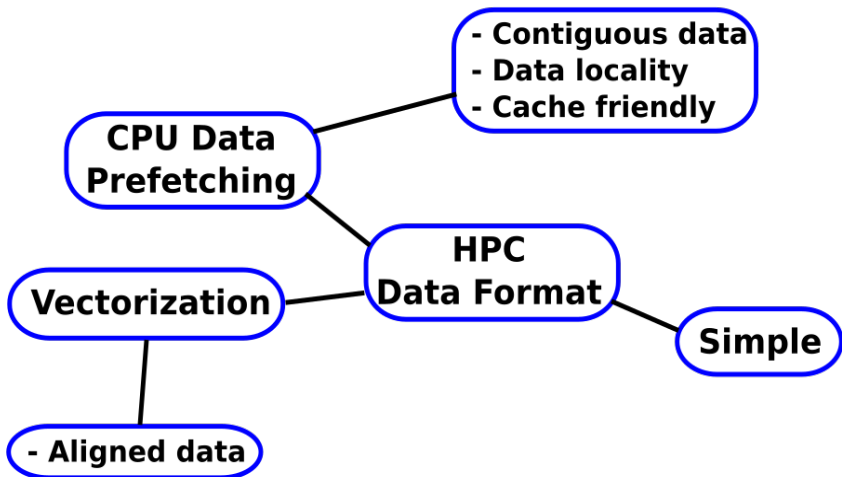
Data format for HPC ?



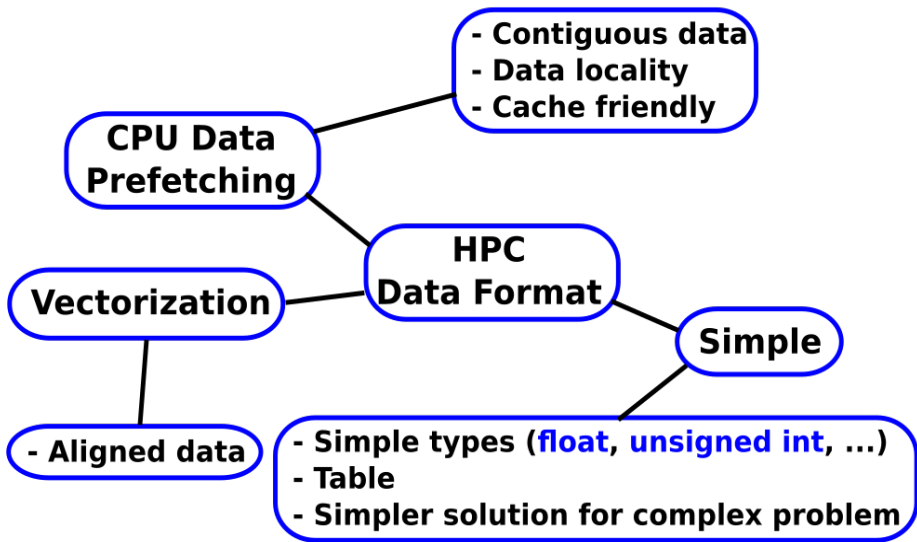
Data format for HPC ?



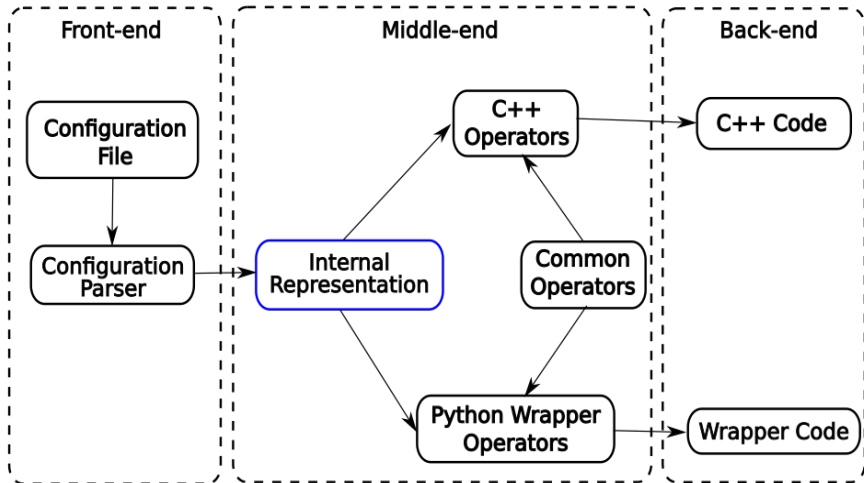
Data format for HPC ?



Data format for HPC ?



Data Format Generator Architecture



For C++ and Python

For C++ and Python

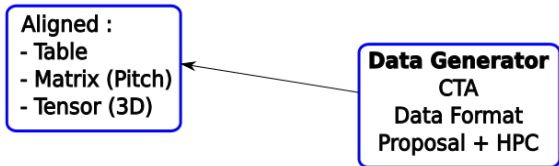
Data Generator

CTA

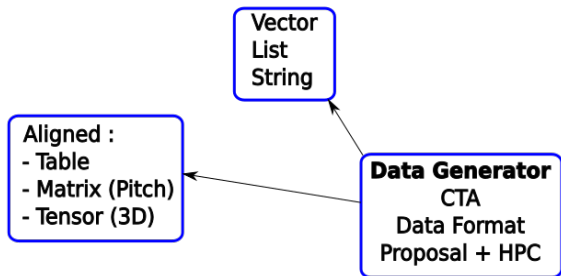
Data Format

Proposal + HPC

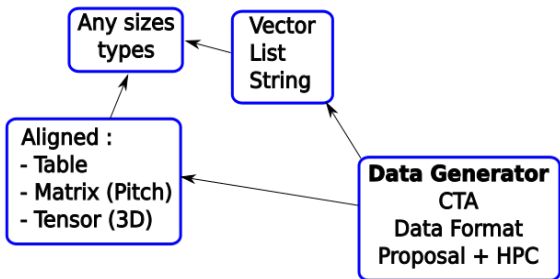
For C++ and Python



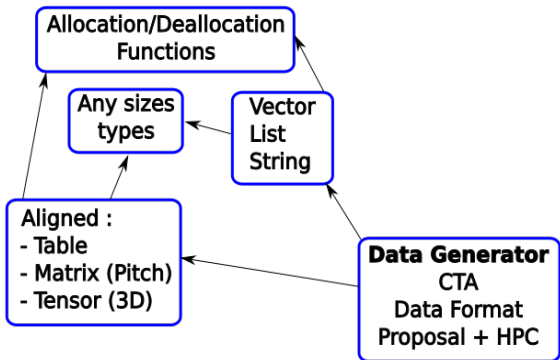
For C++ and Python



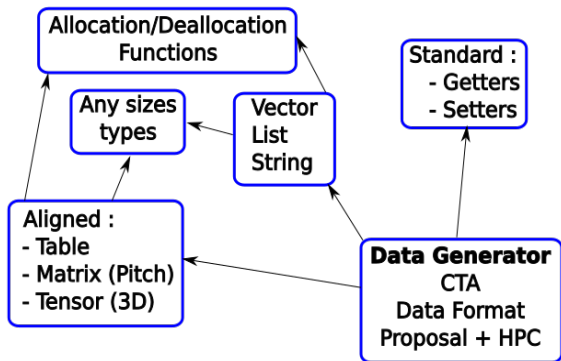
For C++ and Python



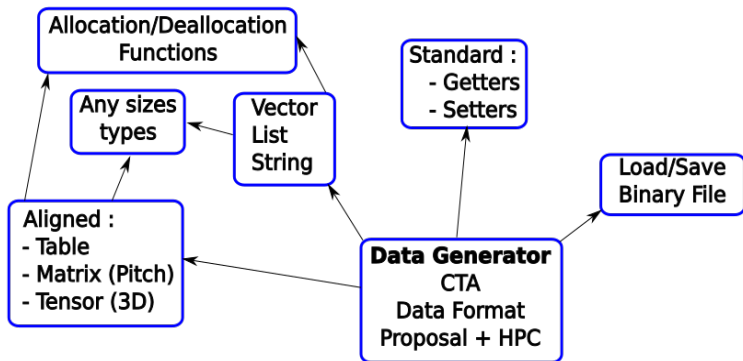
For C++ and Python



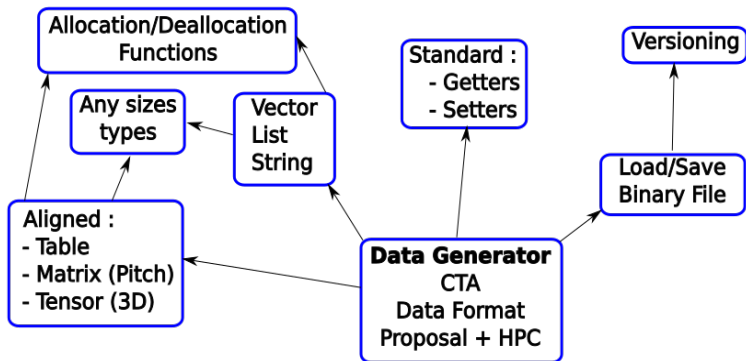
For C++ and Python



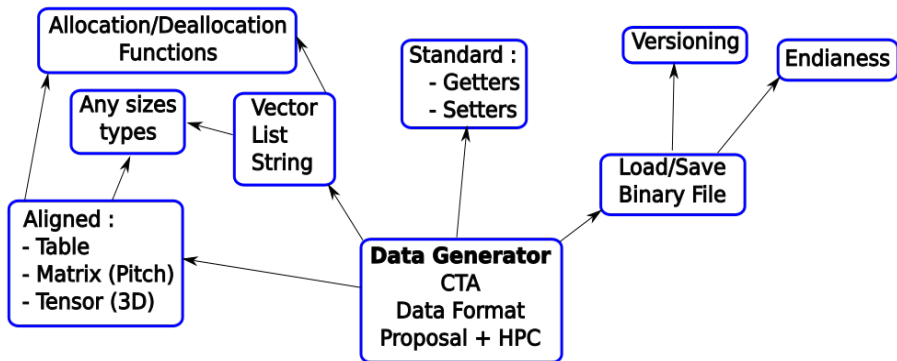
For C++ and Python



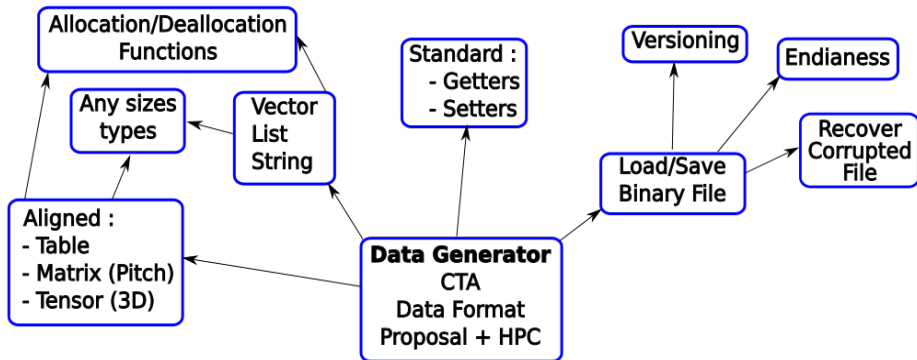
For C++ and Python



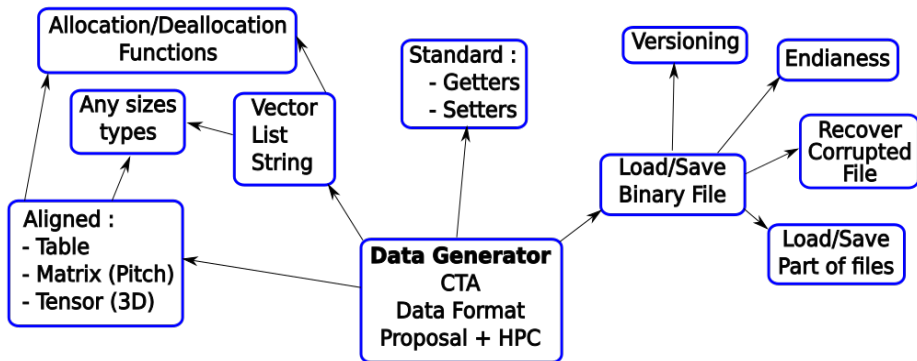
For C++ and Python



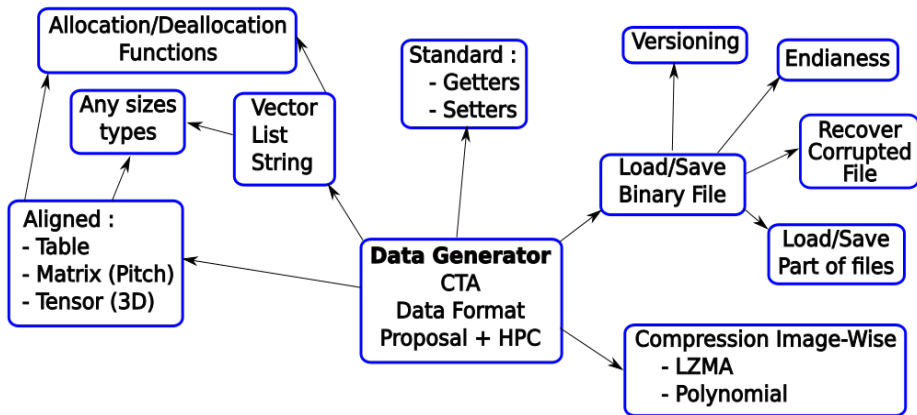
For C++ and Python



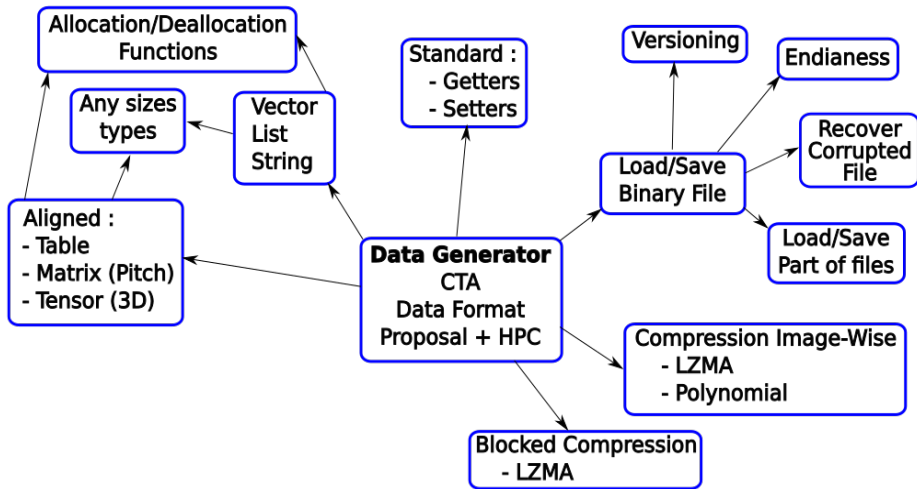
For C++ and Python



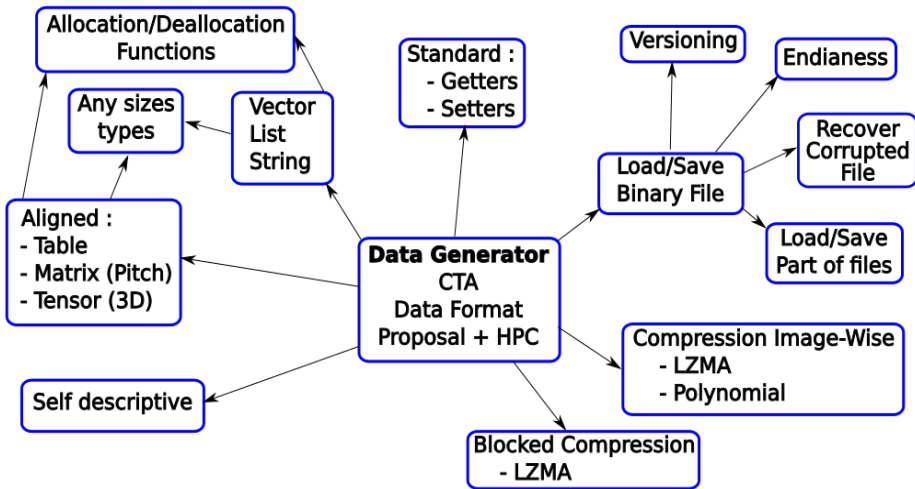
For C++ and Python



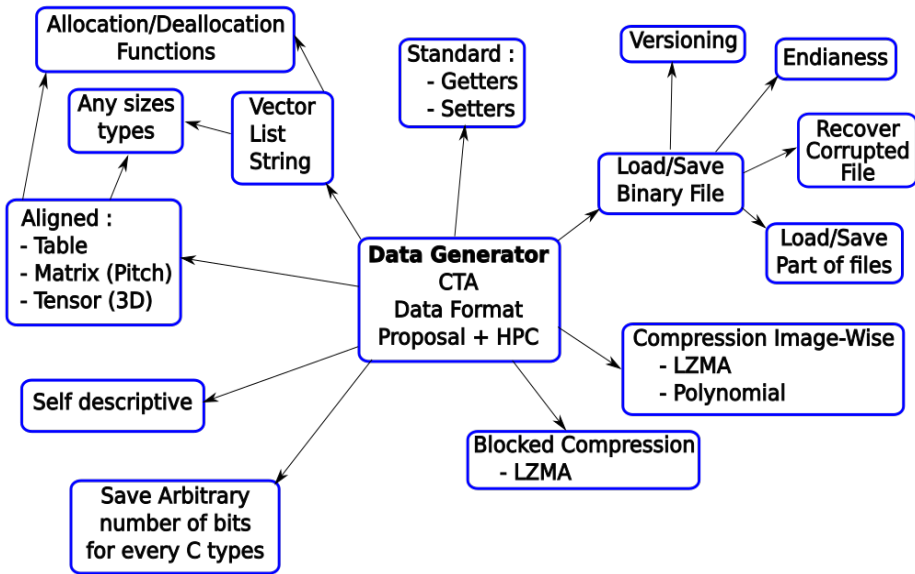
For C++ and Python



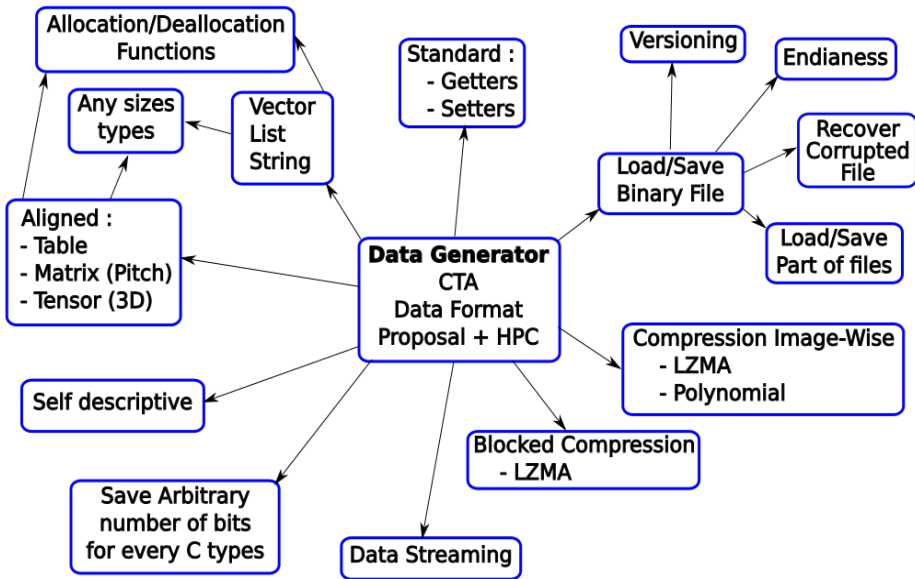
For C++ and Python



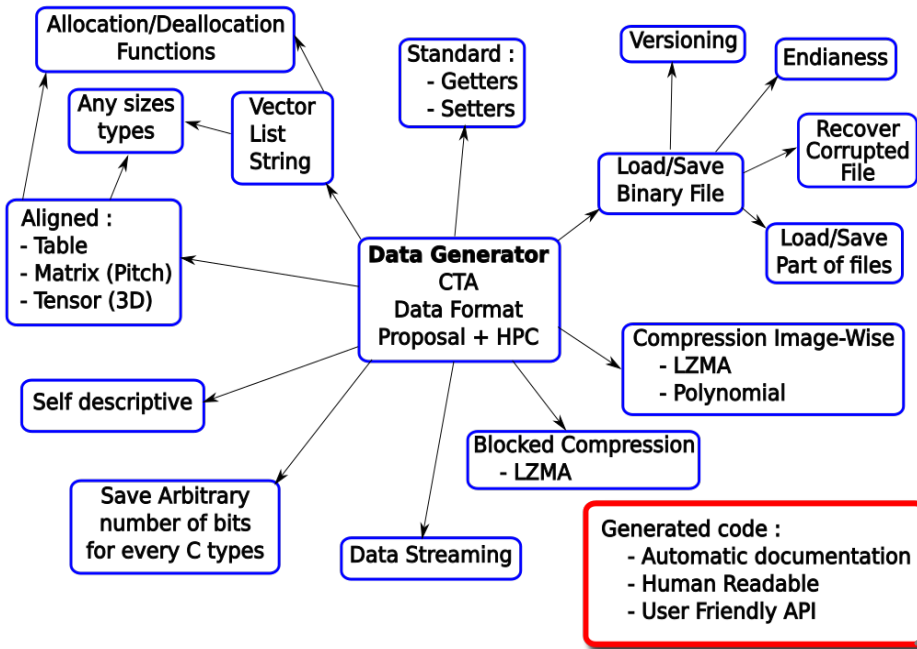
For C++ and Python



For C++ and Python



For C++ and Python



Generated data format performances (use case of CTA)

	<i>dd</i>	Generated Format C++	Generated Python	Generated Python wrapper
Read (RAM)	1494 MB/s	1861 MB/s	481.93 MB/s	2302.58 MB/s
Read(RAM) write(SSD)	120.68 MB/s	376.13 MB/s	11.39 MB/s	258.30 MB/s
Write (SSD)	131.29 MB/s	471.37 MB/s	11.66 MB/s	290.94 MB/s