Continuous deployment of analysis and visualisation tools: a case study on inflicting and mitigating future shock

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The Met Office's AVD Team provide scientific programming tools for scientists. This remit splits into two parts: developing Open Source Python tools, including Iris and cartopy; and making these tools available to those who will benefit from using them as a software stack.

The AVD Team provide these tools both within the Open Source community and to Met Office scientists, in this case using a bespoke system that constructs software stacks containing these and other tools. These software stacks are regularly updated in order to maintain modern versions of the tools provided and to provide new tools when these are released. For some of our users this change is too rapid (and we become a cause of future shock to them); for others this change is not rapid enough. In this we see among our users two different types of people identified in future shock: those who find change threatening and try to ignore it, and those who are more adaptable and able to cope with a faster flow of change. We ourselves as tool developers experience a form of future shock as tools we depend upon are updated rapidly and sometimes unpredictably. In all of these scenarios we see challenges of adopting new technology – in terms of the time needed to change, the mental effort needed to understand the new technology, among others.

In this talk I will introduce Iris, cartopy and the bespoke system we use for producing software stacks. I will look at some of the difficulties we've encountered in providing tools, in both the Open Source community and to Met Office scientists, particularly with regard to the timeliness with which updates are provided. Finally, I will give examples of future shock that we cause and experience and from this share some of the lessons we've learnt so far.