Completeness for a quantum hybrid logic.

Abstract: In this presentation I will introduce a quantum hybrid logic (QHL) on finite dimensional quantum Kripke frames. This quantum hybrid logic has, besides the classical connectives, an operator expressing non-orthogonality, @\_i operators to express truth at a fixed state i and a "down arrow" to name the current state. QHL is an extension of the logic for quantum actions (LQA) introduced by Baltag and Smets and we will show all logical operators of LQA can be expressed in QHL. Quantum Kripke frames were introduced by Zhong and showed these to be equivalent to quantum dynamic frames, using non-orthogonality as an atomic relation, rather than projections. As quantum dynamic frames are dual to Piron lattices, so are quantum Kripke frames. I use an alternative definition forcing finite dimensions, but show this to be equivalent to Zhong's original definition. I will finish the presentation with a completeness proof for this logic using a standard canonical model construction.