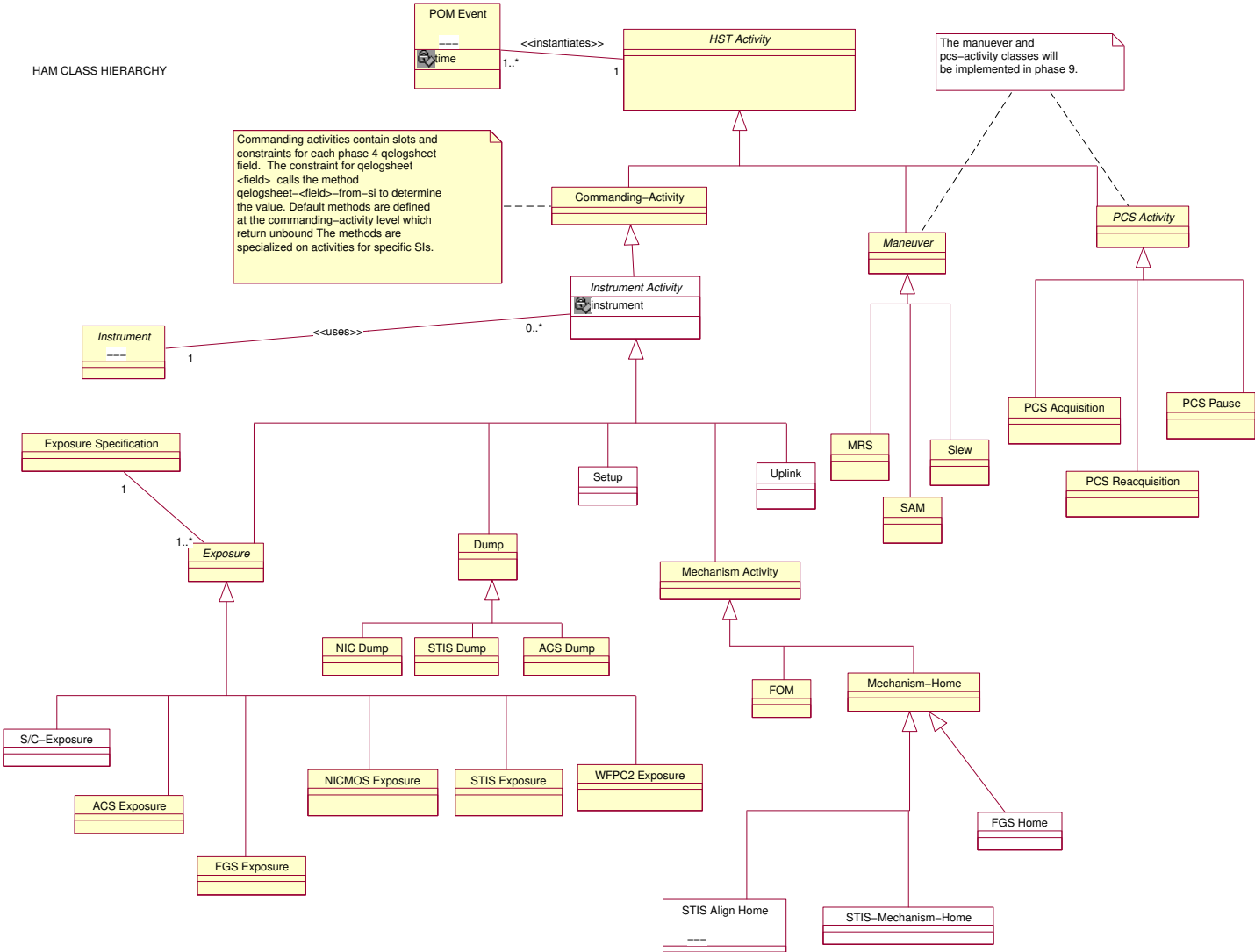HAM CLASS HIERARCHY