The paper presents the formal system ProcI₀, a refinement of the standard sequent calculus LJ₀ for intuitionistic propositional logic. The aim of the new calculus is to allow using proof search (i.e., tautology checking) procedures meant for classical propositional logic, LK₀, to be used when performing proof search (tautology checking) for intuitionistic sequents. This is possible whenever the conclusion of a sequent is a negated formula, thanks to Glivenko’s Theorem, and the gain is in computational complexity, since proof search for classical logic is of a lower complexity class than the one for intuitionistic logic.

ProcI₀ is a sophisticated system allowing “recoverable” formulas to be eliminated from the right-hand side without increase of heights of derivations for invertible rules in comparison to LJ₀. A formula is recoverable, when it can be easily reintroduced during proof search based on the information contained in the left-hand side context.