Definition (loop). Suppose dp is a DPI with factored functionality space $F_1 \times R$:

$$dp = \langle F_1 \times R, R, I, \langle prov_1, prov_2 \rangle, req \rangle.$$

Then we can define the DPI loop(dp) as

$$loop(dp) := \langle F_1, R, I', prov_1, req \rangle,$$

where $I' \subseteq I$ limits the implementations to those that respect the additional constraint $req(i) \leq prov_2(i)$:

$$I' = \{i \in I : req(i) \leq prov_2(i)\}.$$

This is equivalent to "closing a loop" around dp with the constraint $f_2 \geq r$ (??).