Correction to:

"FOLDS, Lindström's theorem, and back-and-forth properties in infinitary logic. Part 1 February 6, 2014 Notes"

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The correction is an addition to the condition on the "generalized first-order logic with dependent sorts" $\mathcal{L}$ in the Theorem "Lindström for FOLDS" on p. 32. The addition is: $\mathcal{L}$ has to be finitely based, according to the definition that follows.

The GFOLDS $\mathcal{L}$ (see: p. 29) is finitely based if it is generated by classes over finite augmented signatures. In other words,

$\mathcal{L}$ is finitely based if $\mathcal{L} = \langle \mathcal{L}_0 \rangle$ (for the notation $\langle - \rangle$, see p. 32) for $\mathcal{L}_0 =$

$$= \bigcup \{ \mathcal{L}_{\underline{\Delta}} : \underline{\Delta} \in (\underline{\mathrm{Aug}}\,\underline{\mathrm{Fr}})_{fin} \},$$

where $(\underline{\mathrm{Aug}}\,\underline{\mathrm{Fr}})_{fin}$ is the set of finite augmented frames $\underline{\Delta} = (\Lambda, X)$, with Λ a finite category. (For $\mathcal{L}_{\underline{\Delta}}$: see p 29).

It is easy to see that the minimal GFOLDS $\mathcal{L}_{\omega\omega} = \langle \emptyset \rangle$ (see: p 33) is finitely based.

→ The corrected statement of the theorem:

For a finitely based GFOLDS $\mathcal{L}$, $\mathcal{L}$ satisfies $\underline{\underline{\mathrm{Cc}}}$ and $\underline{\underline{\mathrm{Cdls}}}$ if and only if $\mathcal{L}$ is the minimal GFOLDS.