(Proposed) Agenda. Using Århus-like techniques, construct a map $Z\colon \mathcal{T}_{vous} \to \mathcal{A}_{vous}$, where $\mathcal{T}_{vous}$ is the space of VOUS-tangles: Virtual tangles with only Over or Under strands, some labeled as Surgery strands, with a non-singular linking matrix between the surgery strands, modulo acyclic Reidemeister 2 moves and Kirby slide relations, and where $\mathcal{A}_{vous}$ is some space of arrow diagrams modulo appropriate relations. The construction will either fix the definitions of $\mathcal{T}_{vous}$ and $\mathcal{A}_{vous}$ or will allow some flexibility that will be fixed so that the following will hold true:

1. $\mathcal{T}_{vous}$ should have a clearer topological interpretation, perhaps in terms of Heegaard diagrams.

2. $\mathcal{A}_{vous}$ should pair with some kind of Lie bialgebras.

3. $\mathcal{A}_{vous}$ should be the associated graded of $\mathcal{T}_{vous}$ and Z should be an expansion.

4. Ordinary tangles $\mathcal{T}_{ord}$ and ordinary virtual tangles $\mathcal{T}_{v\text{-}ord}$ should map into $\mathcal{T}_{vous}$, and when viewed on $\mathcal{T}_{(v\text{-})ord}$, the invariant Z should explain the Drinfel'd double construction.

It may be better to first construct a Z and only later worry about the numbered properties. Yet property 4 has stand-alone topological content which may be very interesting: $\mathcal{T}_{vous}$ is a space with an $R3$-free presentation and which contains $\mathcal{T}_{(v\text{-})ord}$, at least nearly faithfully. What does it mean? To what extent does it make $R3$ superfluous in knot theory?
As for constructing Z, the first step should be a $Z\colon \mathcal{T}_{vou} \to \mathcal{A}_{vou}$ (no surgery), which would have a prescribed behaviour on strand-doubling.