On Hurwitz-Severi numbers

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Abstract. For a point $p \in \mathbb{CP}^2$ and a triple (g, d, ℓ) of non-negative integers we define a *Hurwitz-Severi number* $\mathfrak{H}_{g,d,\ell}$ as the number of generic irreducible plane curves of genus g and degree $d + \ell$ having an ℓ-fold node at p and at most ordinary nodes as singularities at the other points, such that the projection of the curve from p has a prescribed set of local and remote tangents and lines passing through nodes. In the cases $d + \ell \geq g + 2$ and $d + 2\ell \geq g + 2 > d + \ell$ we express the above Hurwitz–Severi numbers via appropriate ordinary Hurwitz numbers. The remaining case $d + 2\ell < g + 2$ is still widely open.