The conjecture is equivalent to the unsolvability of the following bilinear set of inequalities:

$\exists x, y \in \mathbb{R}^4, \exists Z \in \mathbb{R}^{4\times 4}$, $\exists U, V \in \mathbb{R}^{3\times 4}$:

Bilinear inequalities:
$\forall i, j : u_{1j}x_i + u_{2j}z_{ij} + u_{3j} \geq 0,$
$\forall i, j : v_{1i}y_j + v_{2i}z_{ij} + v_{3i} \geq 0,$

Bilinear equalities:
$\sum_j u_{2j}y_j = 0$
$\sum_i v_{2i}x_i = 0$

Linear equalities:
$\sum_j u_{1j} = \sum_j u_{2j} = 0,$
$\sum_j u_{3j} = -1,$
$\sum_i v_{1i} = \sum_i v_{2i} = 0,$
$\sum_i v_{3i} = -1,$