

# Error-Control in the Gray Counter of DNA Self-Assembly

## Supplementary Material

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**Abstract**—Self-assembly is a process by which supramolecular species form spontaneously from their components. This process is ubiquitous and continues throughout the life chemistry and is central to biological information processing. It has been predicted that in future Self Assembly will become an important tool in the fields of bio-molecular computation, crystallography, nanotechnology and medicine. However robustness (i.e. error correction) is a key challenge in realizing the potential of self-assembly. In their early work authors have proposed several combinatorial error correction schemes to control errors having a close analogy with the coding theory such as Winfree’s proofreading scheme and its generalizations by Chen and Goel and compact scheme of Reif, Sahu and Yin. In this work we present a very simple compact scheme of error correction for the assembly of a Gray counter.

### I. SUPPLEMENTARY MATERIAL

The tile set for the proofreading unbounded Gray counter are given below.

#### A. Proofread unbounded Gray Counter

The computational tile set of Proofread Unbounded Gray Counter is shown in Figure 1 and the general representation of this computational tile set is shown in Figure 2.

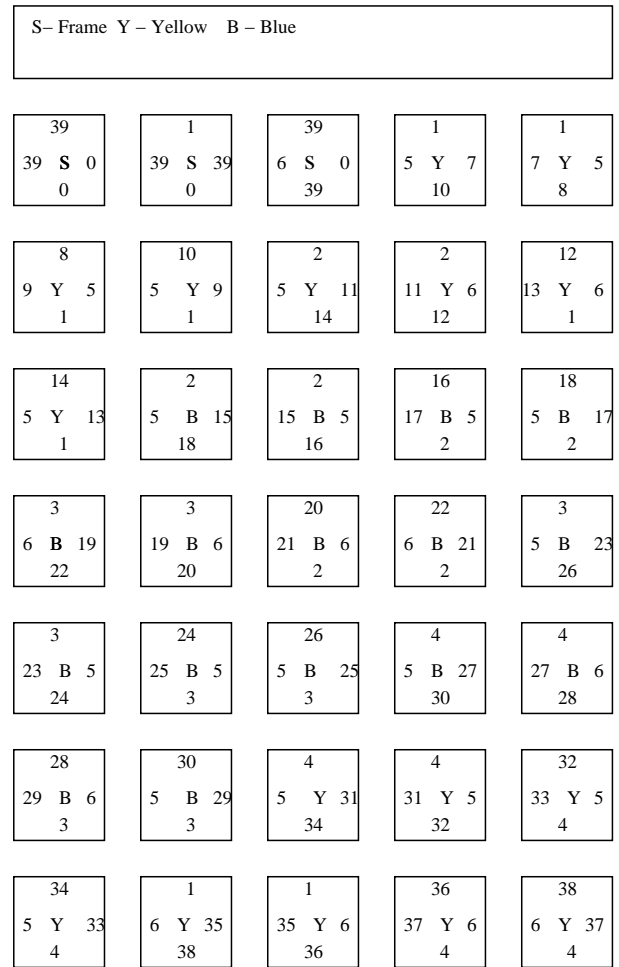


Fig. 1. Computational Tiles: Proofread Unbounded Gray Counter

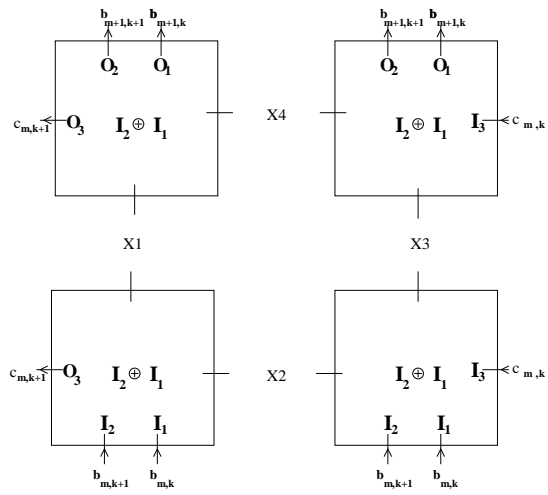


Fig. 2. Proofread Unbounded Gray Counter