TT-Open-WBO-Inc-24: an Anytime MaxSAT Solver Entering MSE'24

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***Abstract*—This document describes the solver TT-Open-WBO-Inc-24, submitted to the four incomplete tracks of MaxSAT Evaluation 2024. TT-Open-WBO-Inc-24 is the 2024 version of our solver TT-Open-WBO-Inc [8], itself based on Open-WBO-Inc [4]. The main innovation in TT-Open-WBO-Inc-24 is the integration of the local search component from NuWLS-c-2023 [3].**

I. Introduction

TT-Open-WBO-Inc [8] is our anytime MaxSAT solver, based on Open-WBO-Inc [4]. Mostly similarly to the previous year's version [10], TT-Open-WBO-Inc-24 combines the following algorithms:

1) NuWLS-c-2023 local search [3] for preprocessing (the only significant change from the previous year's version, based on the 2022 version of NuWLS-c).
2) The unweighted component uses Mrs. Beaver [6], enhanced by the following two heuristics from Sect. 4.1 in [5]: global stopping condition for OBV-BS and size-based switching to complete part.
3) The weighted component uses BMO-based clustering [4].
4) The Polosat SAT-based local search algorithm [7] replaces the regular SAT invocations in both the unweighted and weighted components.

We adjusted some of the low-level parameters of the aforementioned algorithms to the benchmarks from the latest MaxSAT Evaluation.

We submitted two versions of TT-Open-WBO-Inc-24, the difference being the underlying SAT solver:

1) TT-Open-WBO-Inc-24(I): with IntelSAT [9].
2) TT-Open-WBO-Inc-24(G): with Glucose 4.1 [1].

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