TT-Open-WBO-Inc-23:
an Anytime MaxSAT Solver Entering MSE'23

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Abstract—This document describes the solver `TT-Open-WBO-Inc-23`, **submitted to the four incomplete tracks of MaxSAT Evaluation 2023.** `TT-Open-WBO-Inc-23` **is the 2023 version of our solver** `TT-Open-WBO-Inc` **[9], itself based on** `Open-WBO-Inc` **[5]. The main innovation in** `TT-Open-WBO-Inc-23` **is the integration of the local search component from** `NuWLS-c` **[4].**

I. INTRODUCTION

`TT-Open-WBO-Inc` [9] is our anytime MaxSAT solver, based on `Open-WBO-Inc` [5]. Mostly similarly to the previous year's version [11], `TT-Open-WBO-Inc-23` combines the following algorithms:

1) `NuWLS-c` local search [4] for preprocessing (the only significant change from the previous year's version, which used `SATLike` [3]).
2) The unweighted component uses `Mrs. Beaver` [7], enhanced by the following two heuristics from Sect. 4.1 in [6]: global stopping condition for OBV-BS and size-based switching to complete part.
3) The weighted component uses BMO-based clustering [5].
4) The `Polosat` SAT-based local search algorithm [8] 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-23`, the difference being the underlying SAT solver:

1) `TT-Open-WBO-Inc-23(I):` with `IntelSAT` [10].
2) `TT-Open-WBO-Inc-23(G):` with Glucose 4.1 [1].

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