

WPF Ratings and Rankings

January 2023

Why establish WPF Ratings and Rankings?

- **For fun** – lots of solvers are competitive and enjoy tracking their results and progress
- As a way to create **unity** across main puzzle **competitive events**
 - Incentive to take part in events that have an impact on WPF Ratings
→ more audience for these events
- For **marketing** purposes
 - « #1 in the world » or « top 20 solver » are easy to communicate to the general public
 - Possibility to hand out titles (Expert, Master...)

What type of Ratings system?

1. Meaningful

- **Scoring reflects average solving speed, in points/mn, based on WSPC and Grand Prix average point scale**

Ex: a score of 10,000 for the very top solvers reflects the very best performances in GP ie ~10points/mn

2. More « FIDE-like »
than « ATP-like »

- Rating should reflect ability, so **idleness** should have **limited impact**
 - Forcing solvers to take part in a high number of events to maintain their rating does not seem consistent with current level of development
-

3. Moderate impact
of a single event

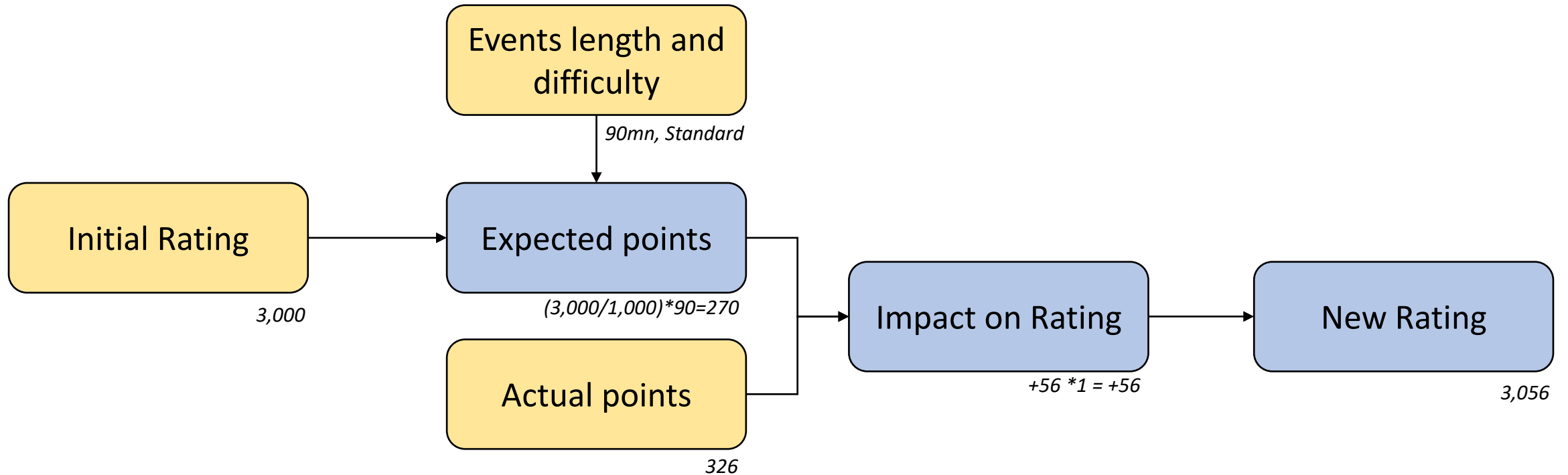
- Wild variations may be fun, but a single underperformance should not for example get a top 20 player out of top 50
 - Potential impact of an event should primarily depend on its **length** (eg a strong performance at WSPC over 2 or 3 days should result in a real boost)
-

4. Not set in stone

- Initial system is fairly simple
- System is bound to change over time – a group of WPF members representatives will manage the system for both day-to-day and evolutions

Key mechanism: impact of an event

Example for a given player



- Example based on standard GP round of 90 mn
- Difficulty of round is assessed after event, based on actual performance of participants → expected points are adjusted by a coefficient (so that Sum of impacts for all solvers = 0)
- Impact on Rating is $(\text{Actual} - \text{Expected}) * K$, with $K=1$ chosen in this version (cf above “some impact but not too much”)

So what does it look like? (2/2)

Sudoku – based on GP 2021, GP 2022, WSC2022

Rank	Name	Country	01/01/22 score	YEAR-END score
1	Tiit Vunk	Estonia	10 057	9 616
2	TanTan Dai	China	9 614	9 510
3	Kota Morinishi	Japan	9 461	9 325
4	Seungjae Kwak	Korea, South	8 061	8 288
5	Jakub Ondroušek	Czech Rep.	8 028	8 001
6	Ken Endo	Japan	8 287	7 949
7	Prasanna Seshadri	India	8 286	7 872
8	Jan Mrozowski	Poland	7 423	7 756
9	Sinchai Rungsangrattana	Thailand	7 896	7 701
10	Bastien Vial-Jaime	France	8 493	7 644
11	Qian Yinchen	China	7 365	7 253
12	Hideaki Jo	Japan	7 128	7 031
13	Jan Zverina	Czech Rep.	7 130	6 969
14	Thomas Snyder	USA	#N/A	6 942
15	Takuya Sugimoto	Japan	6 710	6 713
16	Weifan Wang	China	7 029	6 704
17	Nikola Živanovi?	Serbia	#N/A	6 687
18	Matus Demiger	Slovakia	7 061	6 513
19	Michael Ley	Germany	7 243	6 508
20	Vincent Bertrand	Belgium	6 094	6 469

- No surprises, the usual suspects are in the top 20!
 - Top countries: Japan (4), China (3)
- 900 solvers ranked overall, of which:
 - 3 Legends (Rating >8,849)
 - 9 ArchMasters (Rating from 7,000 to 8,849)
 - 26 GrandMasters (Rating from 5,500 to 6,999)
 - 81 Masters (Rating from 4,000 to 5,499)
 - 237 Experts (Rating from 2,500 to 3,999)
- 500 points seems the approximate Rating for a beginner
- Point scales of 2022 GP were consistent with 2021 GP (maximum difference: Round 8 was 20% easier vs average)
 - However, 2022 WSC was much harder than GPs (30%)

Additional info

- **Initial calibration:**

- 2021 GP used: all participants are given a Jan 1 2022 rating that matches their 2021 performance in pts/mn

- **Initial rating for each individual:**

- Key mechanism applied only to solvers with **over 300 minutes** played
- Before that: temporary Rating is $1000 * \text{performance in pts/mn}$ during these first events (adjusted based on difficulty of events)
- A recent player (<300mn) should not be officially ranked

- **Idleness:**

- Simple rule: **-10% on year-end score** if 0 activity during year
- Something smarter can probably be put in place, but not a short-term priority

- **Going forward...**

- Need for rules to manage « mishap » (losing connexion during a round should not make you lose points)
- Control cheating... very high-level scores obtained online should be validated IRL
- Propose a few rules for events to be WPF-approved (not too many!)
- Use Ratings for qualifications?
- Impact of 1-on-1?
- ...