

5v5 Tactical FPS Ranked Matchmaking System

Complete Design Specification

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DRAFT — Feedback Required to Finalize

This is Version 1 (v1). Feedback and suggestions are needed to refine this into the final version.

Philosophy & Core Principles

- **Transparency First:** Visible rank is truth. Matchmaking uses only displayed rank—no hidden MMR deciding who you face.
- **Merit-Based Movement:** If you're good, you climb fast. If you're inactive or declining, you fall. No artificial padding.
- **Identity & Integrity:** Phone verification for all ranked accounts. One phone number = limited ranked accounts. Smurfs and cheaters face real friction.
- **Minimize Low-Elo Suffering:** Aggressive fast-climb for strong players and smurfs means fewer stomps in lower ranks.
- **Trust-Based Ecosystem:** A hidden Trust Factor score determines matchmaking pool quality. Good behavior earns better teammates; toxic behavior, cheating associations, and smurf patterns pull you into lower-quality lobbies. You reap what you sow.

1. Access Requirements

Account Prerequisites

- Minimum level: 20 (or equivalent unranked playtime)
- Unranked matches required: 10 games minimum
- Phone verification: Mandatory SMS verification for **ALL** ranked players
- 1–2 ranked accounts maximum per verified phone number
- Block known VOIP/virtual number services
- Use carrier verification where possible

Ban & Penalty System

- Banned accounts lock the associated phone number from ranked for 90 days minimum
- Repeat offenders: permanent phone number ban from ranked modes
- Appeals handled through support with ID verification

2. Rank Structure

Rank Tiers

Iron → Bronze → Silver → Gold → Platinum → Diamond → Ascendant → Immortal 1–3 → Radiant

Rank Rating (RR) System

- Each tier (Iron through Ascendant) has 3 divisions
- Each division requires 100 RR
- Promotion: reach 100 RR → advance division, excess carries over
- Demotion: lose at 0 RR → drop division (no protection except Immortal+)

Special High-Rank Rules

- Immortal 1–3: leaderboard-based within tier, has limited demotion protection
- Radiant: top 500 players by RR, pure leaderboard, no protection

3. Matchmaking Rules (Rank-Only)

Solo & Duo Queue

- Match players within ± 1 rank (tight band preferred)
- Maximum spread: ± 2 ranks if queue time exceeds threshold
- No hidden MMR — matchmaker targets average visible rank only
- **Trust Factor Layering:** Within the rank-based pool, players are further sorted by Trust Factor tier. High-trust players are matched together first; low-trust players are pooled separately. This means two Gold 2 players may experience very different lobby quality based on behavior.

Party Queue (3–5 Stack)

- Maximum internal rank spread: 2 full ranks
- Example: Gold 2 can queue with Plat 2, but not Diamond 1
- Matchmaking uses the average player's rank in the party (or slightly above)
- Designed to prevent easy boosting
- **Trust Factor Averaging:** Party Trust Factor = weighted average of all members. If one party member has Poor trust, the entire party's matchmaking shifts toward lower-trust lobbies. This discourages queuing with known cheaters/smurfs.

RR Penalties for Mixed Parties

If a high-rank player queues with 2+ teammates who are 2+ ranks lower:

- High-rank player's RR gains reduced by 25–30%
- Losses remain normal
- Purpose: discourage smurf boosting, make it inefficient

4. Trust Factor System

Overview

Every ranked account carries a hidden Trust Factor Score (TFS) ranging from 0 to 1000. This score is invisible to the player — they only see their Trust Tier (Good, Neutral, or Poor). Trust Factor acts as a secondary matchmaking layer on top of visible rank: within the same rank pool, the system prioritizes matching players of similar trust levels together.

The result: players who play fair, communicate well, and avoid toxic behavior get matched with like-minded teammates. Cheaters, smurfs, boosters, and their associates end up in the same degraded lobbies — a natural prison system that doesn't require manual bans for every offender.

Trust Factor Score (TFS) — Breakdown

Starting Score

- New accounts start at 500 TFS (Neutral tier)
- Phone-verified accounts receive a +50 bonus at creation (start at 550)
- Accounts linked to a previously banned phone number start at 200 (Poor tier)

Score Ranges & Tiers

Trust Tier	TFS Range	Matchmaking Effect	Visual Indicator
Excellent	800–1000	Priority matchmaking with other high-trust players. Shortest queue times within rank. Eligible for “Trusted Player” badge.	Green shield icon (visible only to the player)
Good	600–799	Standard matchmaking. Matched with Good and Excellent players when possible.	No indicator (this is the “normal” experience)
Neutral	400–599	Default pool. Mixed matchmaking quality. May encounter occasional low-trust players during off-peak hours.	No indicator
Poor	200–399	Restricted to low-trust lobbies. Matched primarily with other Poor and Restricted players. Longer queue times. Reduced RR gains (–15%).	Yellow warning icon (visible only to the player)
Restricted	0–199	Shadow pool. Matched almost exclusively with other Restricted players and detected cheaters. Severely degraded match quality. RR	Red warning icon (visible only to the player)

Trust Tier	TFS Range	Matchmaking Effect	Visual Indicator
		gains reduced by 30%. Cannot earn commendations.	

Factors That DECREASE Trust Factor

Severe Offenses (Heavy Penalties)

Offense	TFS Penalty	Notes
Confirmed cheating (anti-cheat detection)	−500 (instant Poor/Restricted)	Plus standard ban. TFS penalty persists even after ban expires.
Manual ban for toxicity/griefing	−200 per offense	Escalating — repeated offenses stack.
Account sharing detected	−300	Sudden performance/hardware fingerprint changes.
Queuing with a confirmed cheater	−150 per occurrence	Applied retroactively when the cheater is banned. Even if you didn't know, repeated association is flagged.
Boosting detected (selling/buying)	−250	Pattern detection: consistently partying with rapidly-cycling low-rank accounts.

Moderate Offenses

Offense	TFS Penalty	Notes
AFK/abandoning a ranked match	−30 per occurrence	Cooldown: only penalized once per 24 hours to avoid punishing genuine disconnects.
Team damage/team flash abuse	−15 per match flagged	Requires threshold: 3+ intentional team damage incidents in one match.
Excessive negative comms (voice/text toxicity detected)	−20 per flagged match	Automated detection + report-weighted.
Repeated reports from unique players	−10 per verified report cluster	Cluster = 3+ unique reporters in a rolling 10-game window. Single reports from salty teammates are filtered out.
Deranking behavior (intentional losing)	−40 per flagged session	Stats-based: <50 ADR + bottom frag + loss streak + abnormal movement patterns.

Association Penalties

Behavior	TFS Penalty	Notes
Regularly queuing with Poor/Restricted players	−5 per match (up to −50/month)	“Regularly” = 5+ matches in a 30-day window with the same Poor-tier player.

Behavior	TFS Penalty	Notes
Queuing with a player who is later banned	−100 retroactive	Applied when the party member receives a ban. Scales: −100 for cheating ban, −50 for toxicity ban.
Participating in a boosting ring	−300	Network detection: multiple accounts cycling through parties with unusual rank disparities.

Factors That INCREASE Trust Factor

Passive Gains (Playing Normally)

Behavior	TFS Gain	Notes
Completing a ranked match without reports	+2 per match	The baseline. Just playing normally and not being toxic slowly builds trust.
Consecutive clean matches (no reports, no AFK, no penalties)	+3 bonus per 10-match streak	Streaks reward sustained good behavior.
Account age bonus	+1 per week (max +200 lifetime)	Long-standing accounts earn gradual trust. Capped to prevent old toxic accounts from being immune.
Phone verification maintained	+50 one-time	Already counted in starting score, but re-applied if phone is re-verified after a change.

Active Gains (Commendation System)

See the Commendation System subsection below for full details.

Commendation Type	TFS Gain	Notes
Receiving a “Good Teammate” commendation	+5 per commendation	Max 2 commendations counted per match from unique players.
Receiving a “Great Comms” commendation	+5 per commendation	Same cap.
Receiving a “Clutch Player” commendation	+3 per commendation	Performance-based, slightly lower weight to prevent “commend the carry” farming.
Commendation streak: 5+ commendations in 10 games	+15 bonus	Rewards consistently positive players.
Commending other players (giving commendations)	+1 per commendation given	Small reward for engaging with the system. Max +3 per day.

Rehabilitation Gains (Climbing Out of Poor/Restricted)

Behavior	TFS Gain	Notes
Clean match in Poor/Restricted tier	+4 per match (instead of +2)	Double the passive gain — system rewards improvement.
20 consecutive clean matches in Poor tier	+50 bonus	Major milestone. Shows sustained behavior change.
50 consecutive clean matches in Restricted tier	+75 bonus	Harder milestone for deeper hole.
Completing a “Rehabilitation Review” (50 clean games, no reports, positive comms score)	One-time boost to 400 TFS (Neutral floor)	Safety net: even deeply penalized players can reset to Neutral with genuine sustained effort. Cannot be triggered more than once per 6 months.

Commendation System

How It Works

After every ranked match, each player can commend up to 2 teammates (not opponents, not party members). Commendations are optional and presented on the post-match screen.

Commendation Categories

Category	Description	Icon
Good Teammate	Played well with the team. Traded effectively, didn't bait, good utility usage.	Handshake icon
Great Comms	Clear, helpful callouts. Positive attitude in voice/text chat. Not toxic even when losing.	Microphone icon
Clutch Player	Made game-changing plays. High-impact rounds, clutches, or entries.	Star icon

Anti-Abuse Rules for Commendations

- Cannot commend party members (prevents commend trading in stacks)
- Maximum 2 commendations given per match
- Maximum 2 commendations received that count toward TFS per match (extras are displayed but don't add score)
- Commendations from Restricted-tier players do not count toward TFS (prevents boosting rings from inflating trust)
- Commendation farming detection: if two players repeatedly commend each other across 10+ games without being in a party, flag and nullify the mutual commendations

Commendation weight scales with the giver's trust tier:

- From Excellent player: 1.5× value

- From Good player: 1.0× value (standard)
- From Neutral player: 0.75× value
- From Poor player: 0.5× value
- From Restricted player: 0× (does not count)

Commendation Milestones & Rewards

Milestone	Reward
50 total commendations received	“Respected” title unlockable for player card
150 total commendations received	“Trusted” title + permanent +25 TFS
500 total commendations received	“Community Pillar” title + permanent +50 TFS + “Trusted Player” badge
100 commendations given	“Team Player” title
Commendation rate >40% (received in >40% of matches over 100+ games)	Eligible for “Community Ambassador” program (beta access, feedback panels)

Trust Factor & Matchmaking Integration

How Trust Factor Layers onto Rank-Based Matchmaking

- Primary filter: Visible rank (± 1 –2 ranks, same as base system)
- Secondary filter: Trust Factor tier matching
- System attempts to match within same tier (Excellent with Excellent, Poor with Poor)
- If queue time exceeds 3 minutes, expand to adjacent tiers (e.g., Good + Excellent)
- Poor and Restricted players NEVER get matched with Excellent players, regardless of queue time
- Tertiary filter: party Trust Factor averaging for stacks

Trust Factor’s Effect on RR

Trust Tier	RR Modifier	Rationale
Excellent	+10% bonus RR on wins	Reward for sustained positive behavior. The “good player + good behavior = fast climb” loop.
Good	No modifier	Standard experience.
Neutral	No modifier	Standard experience.
Poor	–15% RR on wins	Reduced gains. Combined with degraded lobbies, this is a strong incentive to improve. Losses are NOT increased.
Restricted	–30% RR on wins	Severe. Effectively soft-locks progression without outright banning. Losses are NOT increased.

The “Good Player + Good Trust = Fast Climb” Loop

This is the core philosophy: If you are skilled AND have high trust, you get:

- Better teammates (high-trust lobbies = less griefing, more communication, more teamwork)
- Slightly faster RR gains (+10% at Excellent)
- More consistent matches (less variance from throwers/AFKs)
- The compound effect: better teammates → higher win rate → faster climb → reach true rank sooner

Conversely, toxic skilled players face:

- Worse teammates (low-trust lobbies = more griefing, less coordination)
- Slower RR gains (−15% to −30%)
- More chaotic matches (more smurfs, more throwers in the same pool)
- The result: skill alone isn't enough to maintain high rank. Behavior matters.

Trust Factor Transparency & Communication

What Players See

- Their Trust Tier indicator (Excellent green shield / no indicator for Good-Neutral / yellow warning for Poor / red warning for Restricted)
- A tooltip explanation: “Your trust level affects matchmaking quality. Maintain good behavior and earn commendations to improve it.”
- Commendation count and milestones on their profile
- They do NOT see their exact numerical TFS

What Players DON'T See

- Exact TFS number (prevents gaming the system)
- Other players' trust tiers (prevents discrimination/dodging)
- Specific penalty breakdowns (prevents reverse-engineering what behavior is/isn't detected)

Notifications

- When TFS drops a tier: “Your trust level has decreased. Recent behavior has affected your matchmaking quality. Play fairly and earn commendations to improve.”
- When TFS rises a tier: “Your trust level has improved! You'll now be matched with higher-quality teammates.”
- Monthly trust summary (optional): “This month: 12 commendations received, 0 reports, Trust Level: Good.”

Trust Factor Edge Cases & Safeguards

False Positive Protection

- No single match can drop TFS by more than 50 points (except confirmed cheating)
- Report-based penalties require cluster validation (3+ unique reporters in 10 games)
- Toxicity detection uses confidence thresholds — borderline cases are not penalized
- Players can request a Trust Factor review through support (once per 90 days)

Decay & Maintenance

- TFS does not decay from inactivity (unlike rank). Your behavior record persists.
- Very old offenses (12+ months) have their penalties reduced by 50% (“behavior half-life”)
- This means a player who was Poor 18 months ago but has been clean since will naturally drift toward Neutral/Good

New Account Protection

- First 20 ranked games have reduced TFS penalties (50% of normal) to account for learning curve
- Exception: cheating detection applies full penalty regardless of account age

Trust Factor Data Requirements

Per-Account Trust Data:

- Current TFS (integer 0–1000)
- Trust Tier (derived from TFS range)
- Commendation totals (received and given, by category)
- Penalty history (timestamped log of all TFS changes)
- Association graph (frequently queued partners and their TFS)
- Rehabilitation status (clean game counter, milestone progress)
- Last tier-change timestamp
- Monthly commendation rate

5. Base RR Gains & Losses

Band A: Iron → Gold

Goal: Fast sorting, volatile movement

Outcome	Base RR	Round Modifier	Typical Range
Win	+18	+2 for stomp (≥6 round diff)	+16 to +24
Loss	-18	-2 for getting stomped	-16 to -20

Band B: Platinum → Ascendant

Goal: More stable, slower movement

Outcome	Base RR	Round Modifier	Typical Range
Win	+16	+2 for stomp	+14 to +22
Loss	-16	-2 for getting stomped	-14 to -20

Band C: Immortal 1–3

Goal: Tight, punishing, minimal volatility

Outcome	Base RR	Round Modifier	Typical Range
Win	+14	+2 max	+12 to +18
Loss	-14	-2 max	-12 to -18

Radiant: Same RR math as Immortal. Placement determined by top 500 leaderboard position. Can gain/lose Radiant status daily based on relative RR.

Note: All base RR values above are further modified by the player's Trust Factor tier. Excellent trust adds +10% to wins. Poor trust reduces wins by 15%. Restricted trust reduces wins by 30%. See Section 4 for full Trust Factor RR modifiers.

6. Fast-Climb System (Smurf Detection & High-Skill Acceleration)

When Fast-Climb Applies — Trigger Conditions (any one)

- First 15 ranked games on a new or low-rank account
- Account flagged as "far above bracket performance" for 5+ consecutive games
- Returner: decayed account with peak $\geq$ Ascendant, now 2+ ranks below peak, inactive ≥ 30 days

Performance Detection Metrics

Metric	Threshold for Flagging
ADR (Average Damage per Round)	+30% above rank average
First Blood Rate	+20 percentage points above average
Opening Duel Win Rate	+20 percentage points above average
KAST %	Consistently top 2 on team for 5+ matches
Multi-kill frequency	2+ multi-kills per match, 5+ match streak
Consistency	Performance sustained across multiple maps

Fast-Climb RR Scaling

Phase 1: Gold → Diamond (Heavy Acceleration)

Outcome	RR Amount	Cap	Notes
Win	Base $\times 2.8$	+60 RR max	~+50 RR effective average
Loss	Normal	-18 RR	No extra punishment

Max rank jump per win: 2 divisions (can skip divisions)

Phase 2: Diamond → Ascendant (Moderate Acceleration)

Outcome	RR Amount	Cap	Notes
Win	Base $\times 2.5$	+45 RR max	~+35–40 RR effective average
Loss	Normal	-18 RR	No extra punishment

Max rank jump per win: 1 division

Phase 3: Ascendant → Immortal (Light Acceleration)

Outcome	RR Amount	Cap	Notes
Win	Base × 1.75	+30 RR max	~+24–28 RR effective average
Loss	Normal	−18 RR	No extra punishment

Max rank jump per win: None (normal progression)

Exit Conditions

- Fast-climb scaling stops when player's performance normalizes to rank baseline for 10 consecutive games, OR player reaches Immortal tier

Optional: High-Impact Queue

- During active fast-climb phase (Phase 1–2), optionally match flagged players primarily against other detected smurfs/high-skill accounts and players also in fast-climb acceleration
- Purpose: reduce stomps in true low-elo lobbies while they rank up

7. Expected Climb Speed (Design Target)

Immortal-Level Player Returning from Gold (Assuming 75–80% Win Rate)

Journey Segment	RR Needed	Avg RR/Win	Wins Needed	Games (at WR)	Cumulative
Gold 1 → Diamond 1	~800 RR	+50	16	~20 games	20
Diamond 1 → Ascendant 1	~400 RR	+38	11	~14 games	34
Ascendant 1 → Immortal 1	~400 RR	+26	16	~23 games	57 games total

Target: Legit Immortal player reaches Immortal in 50–60 games from Gold.

Why This Matters

- Minimizes time strong players spend in low ranks
- Reduces "why is a smurf in my lobby" experiences
- Genuine skill is rewarded with rapid, visible progression

8. Derank Protection (Immortal+ Only)

Iron → Ascendant

No protection: lose at 0 RR = immediate demotion. Philosophy: rank reflects current performance, no padding.

Immortal 1–3

- One shield per division: first loss at 0 RR breaks shield instead of demoting
- Second loss at 0 RR (after shield breaks) = demotion
- Shield regenerates when you gain RR above 0

Radiant

No protection: leaderboard-based, fall out immediately when RR drops below top 500 threshold. Most volatile, most prestigious.

9. Rank Decay (Inactivity System)

Rank Tier	Decay Starts After	RR Lost Per Week	Can Decay Through Ranks?
Iron–Plat	No decay	—	—
Diamond	21 days inactive	–35 RR/week	Yes
Ascendant	18 days inactive	–50 RR/week	Yes
Immortal	14 days inactive	–75 RR/week	Yes
Radiant	14 days inactive	–100 RR/week	Yes

Decay Behavior

- Decay ignores shields: will break Immortal protection and cause demotion
- Decay can drop players all the way down over long breaks (no seasonal floor)
- Purpose: keep high ranks current; prevent washed players from inflating lobbies

Decay Communication (UX)

- Show clear countdown timer: "Decay begins in X days"
- Display projected loss: "You will lose 50 RR per week if inactive"
- Mark decayed losses separately in match history (not counted as "played and lost")

10. Returner Fast-Climb (Post-Decay)

Trigger Conditions

- Player's peak rank $\geq$ Ascendant
- Current rank is 2+ full ranks below peak
- Inactive for ≥ 30 days

Returner RR Scaling

- Apply half-strength of normal fast-climb multipliers (Phases 1–3)
- Active for first 10–20 ranked games after return

Example (returning Immortal now in Gold):

- Gold–Diamond wins: $\sim +50$ RR (instead of $+18$ base)
- Diamond–Ascendant wins: $\sim +35$ RR
- If they maintain strong performance $\rightarrow$ rapid climb back to old rank
- If they're washed $\rightarrow$ gains normalize, they stabilize at new (lower) true rank

Philosophy: Give benefit of doubt to proven players. If they're still good, they reclaim rank quickly. If not, they settle lower and stop dragging down high-elo lobbies.

11. User Experience & Communication

In-Client Messaging

Matchmaking Transparency:

"Matchmaking uses your visible rank only. You will face players within $\pm 1-2$ ranks of your displayed tier."

Fast-Climb System:

"Exceptional performance can result in significantly faster rank gains, especially in your first 15 games or when returning after a break."

Decay Warning:

"Diamond and above: ranks decay after 14–21 days of inactivity. You can lose multiple ranks if you don't play regularly."

Player Profile Display

- Current Rank (large, visible)
- Peak Rank (this act and all-time)
- RR Progress (e.g., "Gold 2: 73/100 RR")
- Decay Timer (if applicable)
- Recent Match History with RR gains/losses clearly shown

Post-Match Screen

- Show exact RR gained/lost
- Brief reason: "Strong individual performance: +48 RR" or "Close match, normal gain: +18 RR"
- Round differential impact visible

12. Anti-Abuse & Edge Cases

Boosting Prevention

- Mixed-rank party penalties (−25–30% RR for high-rank player)
- Matchmaking targets highest player's rank (or above)
- Makes "carry for hire" inefficient

Deranking Prevention

- AFK/griefing detection triggers immediate RR penalty (−50 RR) + escalating bans
- Soft int detection via stats: repeated bottom-fragging + throwing behavior → manual review + ban

Account Sharing

- Phone verification limits account proliferation
- Sudden MMR/performance swings trigger manual review
- Shared accounts risk permanent ban on detection

False Positive Mitigation (Fast-Climb)

- Require 5+ games of sustained performance before flagging
- Exit fast-climb naturally if performance normalizes
- Philosophy: better to fast-promote a few legit hot-streakers than let smurfs farm low elo

Trust Factor as Anti-Abuse Layer

- Cheaters who evade bans but exhibit similar patterns on new accounts start with degraded TFS
- Smurf accounts that trigger fast-climb are monitored — if fast-climb + low trust, they're isolated into smurf-only lobbies
- Boosting rings are network-detected through association graphs and penalized across all participating accounts
- "Soft punishment" philosophy: Trust Factor degrades lobby quality before hard bans are needed, catching borderline offenders that anti-cheat alone misses

13. System Engineering Notes

Data Tracking Requirements

Per-Match Stats (store for all players)

Kill/Death/Assist, ADR, KAST%, First Bloods, Opening Duels, Multi-kills, Clutches, Round win contribution score, Consistency metrics across recent matches

Per-Account Metadata

- Current RR and rank
- Peak RR and rank (act and all-time)
- Fast-climb phase (active/inactive)
- Decay timer and last-played timestamp
- Phone verification status and linked number hash
- Match history (last 50+ games)

Matchmaking Queue Algorithm

- Pool formation: group players by visible rank $\pm 1-2$ tiers
- Party handling: treat party as single entity with highest member's rank
- Balance: create two teams with similar average visible rank
- Fast-climb flagging: optionally segregate active fast-climb players into separate pool
- Queue time cap: widen search after 3–5 minutes to prevent excessive wait

RR Calculation Pipeline

```
1. Determine base RR (win/loss + round diff)
2. Check fast-climb status:
   If flagged: apply phase-appropriate multiplier and cap.
   If normal: use base value
3. Check party penalty:
   If high-rank in mixed party: reduce gain by 25-30%
4. Apply final RR delta
5. Check for promotion/demotion/shield break
6. Update rank and matchmaking pool assignment
7. Log to match history
```

Decay Batch Process (Daily)

```
For each account in Diamond+:
  Calculate days since last ranked match
  If >= decay threshold:
    Calculate RR loss (decay rate x weeks overdue)
    Apply RR penalty
```

```
Check for tier demotion (ignore shields)
Send notification/warning
Update decay timer
```

Phone Verification System

- Store hashed phone numbers only (never plaintext)
- Rate-limit verification attempts (prevent brute force)
- Integrate with SMS gateway (Twilio, AWS SNS, etc.)
- Maintain banned phone hash list
- Allow phone number change once per 90 days with support verification

14. Tuning & Balance Levers

Goal	Lever to Adjust
Slower overall climb	Reduce base RR (+18 → +15)
Faster smurf exit	Increase fast-climb caps (+60 → +80)
More rank stability	Tighten RR ranges (± 2 instead of ± 4)
Reduce high-rank inflation	Increase decay rate at Immortal/Radiant
Reduce boosting	Increase party penalty (−30% → −40%)
More forgiving for casuals	Add mild protection at Plat+ (optional shields)
Lobbies feel too toxic	Increase commendation TFS rewards (+5 → +8)
Trust system too punishing	Reduce association penalties, increase rehabilitation gains
Commendation farming	Tighten anti-abuse rules, reduce mutual commendation window
Queue times too long for Poor players	Widen trust-tier matching (allow Poor + Neutral)

Recommendation: Start conservative, gather data for 1–2 acts, then tune based on:

- Rank distribution (aim for bell curve centered around Gold–Plat)
- Average games to climb per tier
- Player sentiment (surveys, forums)
- High-rank queue health (population, queue times)

15. Success Metrics

Player Experience

- Match balance: average rank spread per lobby (target: ≤ 1.5 ranks)
- Stomp rate: games ending ≥ 10 round difference (target: $< 15\%$)
- Sentiment surveys: "Do you feel your rank is accurate?" (target: $> 70\%$ yes)
- Trust Factor accuracy: % of players who agree "my trust level is fair" (target: $> 65\%$)
- Commendation engagement: % of players who give at least 1 commendation per session (target: $> 30\%$)

System Performance

- Smurf time-in-elo: average games a flagged smurf spends below true rank (target: < 25 games)
- Returner satisfaction: % of decayed players who reach old rank within expected window
- Queue times: 95th percentile wait time by rank (target: < 5 min for Diamond+, < 3 min below)

Competitive Integrity

- Ban rate: accounts banned per 10k ranked games (monitor for spikes)
- Phone verification bypass attempts: flagged fake numbers (aim for $< 1\%$)
- Boosting detection: mixed-party win rate vs solo (flag if delta $> 15\%$)
- Trust tier distribution: target 15% Excellent, 35% Good, 30% Neutral, 15% Poor, 5% Restricted
- Cheater isolation rate: % of confirmed cheaters in Restricted tier at time of ban (target: $> 80\%$)
- Trust tier distribution: target 15% Excellent, 35% Good, 30% Neutral, 15% Poor, 5% Restricted
- Cheater isolation rate: % of confirmed cheaters in Restricted tier at time of ban (target: $> 80\%$)

Target Rank Distribution

Rank	Target %
Iron	2%
Bronze	8%
Silver	15%
Gold	22%

Rank	Target %
Platinum	20%
Diamond	15%
Ascendant	10%
Immortal	5%
Radiant	0.1% (top 500)

16. Launch Checklist

Pre-Launch (Development)

1. Implement RR calculation engine with all phase logic
2. Build fast-climb detection system (stat baselines per rank)
3. Integrate phone verification (SMS gateway, hash storage)
4. Create decay batch job (runs daily)
5. Design matchmaking queue algorithm (rank-only pools)
6. Build player profile UI (rank, peak, RR, decay timer)
7. Implement post-match RR breakdown screen
8. Set up analytics pipeline (match stats, RR tracking, distribution)

Beta Testing

1. Run closed beta with 1000+ players across all ranks
2. Validate fast-climb triggers correctly (no false positives)
3. Stress-test phone verification (various carriers, regions)
4. Measure queue times and match balance
5. Gather qualitative feedback (surveys, interviews)

Launch (Season 1)

1. Deploy with conservative tuning (can tighten later)
2. Monitor dashboards 24/7 for first week
3. Prepare rapid hotfix capability for RR/matchmaking bugs
4. Communicate system clearly (in-game tutorials, blog post, video)
5. Set up player support flow for phone verification issues

Post-Launch (Ongoing)

- Weekly: review rank distribution, adjust if skewed
- Monthly: analyze smurf detection accuracy, tune thresholds
- Quarterly: major balance pass (RR values, decay rates)
- Act reset: soft reset (everyone drops ~2–3 ranks, keeps internal skill estimate for fast-climb seeding)

17. FAQ / Design Rationale

Q: Why no hidden MMR?

A: Transparency and trust. Players know exactly what they're playing for and against. Rank feels real, not cosmetic.

Q: Won't smurfs still ruin games?

A: Phone verification raises friction; fast-climb (50–60 games to Immortal) minimizes time in low elo. No system is perfect, but this aggressively limits damage.

Q: What if someone has a lucky streak and gets boosted too high?

A: They'll lose more and stabilize. No derank protection below Immortal means rank self-corrects quickly.

Q: Why allow full decay instead of a seasonal floor?

A: Honesty. If you don't play for months, your skill changes. Decaying fully and re-climbing with fast-climb gives you a fair, fast path back if you're still good.

Q: Why party penalties?

A: Discourage boosting. If you're Immortal carrying Gold friends, you should face harder lobbies and gain less RR. Keeps ranked competitive.

Q: What about role/agent balance in matchmaking?

A: Not covered here. Assume either role queue (separate MMR per role) or free pick with team balancing heuristics. Rank system is role-agnostic.

Q: What is Trust Factor and can I see my score?

A: Trust Factor is a hidden behavior score that affects your matchmaking quality. You can see your tier (Excellent, Good, Neutral, Poor, or Restricted) but not the exact number. This prevents players from gaming the system while still giving feedback on where you stand.

Q: I got matched with bad teammates — is my Trust Factor low?

A: Not necessarily. Check your trust tier indicator. If you see no warning icon, you're in the normal pool. Bad matches happen to everyone. Consistent issues with match quality may indicate a trust decline — focus on positive play and earning commendations.

Q: Can I get stuck in Poor/Restricted forever?

A: No. The rehabilitation system guarantees a path out. Playing 50 consecutive clean games in Poor tier earns a major TFS bonus. Completing a full rehabilitation review (50 clean games, no reports, positive comms) resets you to Neutral. It takes effort, but it's always possible.

Q: Why can't I commend my party members?

A: To prevent commendation trading. If friends could commend each other every game, Trust Factor would be meaningless. Commendations from solo teammates carry genuine weight.

Q: Does Trust Factor decay if I don't play?

A: No. Unlike rank, your Trust Factor is permanent and based on behavior, not activity. Old offenses gradually reduce in impact over time (12+ month half-life), but your positive history stays.

Summary Table: Key Numbers at a Glance

Parameter	Value
RR per division	100
Base RR (Iron–Gold)	+18 / –18
Base RR (Plat–Asc)	+16 / –16
Base RR (Immortal)	+14 / –14
Fast-climb cap (Gold–Diamond)	+60 RR
Fast-climb cap (Diamond–Ascendant)	+45 RR
Fast-climb cap (Ascendant–Immortal)	+30 RR
Party rank spread limit	2 ranks max
Party RR penalty	–25–30% for high-rank player
Immortal shield	1 per division
Radiant population	Top 500 by RR
Decay start (Diamond)	21 days inactive
Decay start (Immortal/Radiant)	14 days inactive
Decay rate (Immortal)	–75 RR/week
Phone accounts per number	1–2 max
Target climb (Gold → Immortal, 75% WR)	~50–60 games
Trust Factor score range	0–1000
Starting TFS (new account)	500 (550 with phone verification)
Excellent trust RR bonus	+10% on wins
Poor trust RR penalty	–15% on wins
Restricted trust RR penalty	–30% on wins
Commendations per match (max given)	2
Commendation TFS value	+3 to +5 per commendation
Rehabilitation reset threshold	50 clean games (Poor), review available once per 6 months

End of Specification — v1