

CIVL Plenary 2026: Swiss Proposal 01 V2 – Elevated Goal

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Proposal Number: [Assigned by CIVL]

Proposal Purpose: Introduction of Elevated Goals in Cross-Country Paragliding and Hang-Gliding XC Competitions

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1 Background / Context

1.1 Current Situation

In current CIVL XC competitions, goals are defined at ground level, and time for the speed result is normally taken at a separate End of Speed Section (ESS) located before the physical goal. ESS was introduced when final glides on earlier-generation paragliders were considered a high-risk phase. The aim was to keep the high-speed part of the flight at higher altitude and allow pilots to fly the last part to goal more slowly and safely. This separated two high-risk parts of race flights (high speed and close to the ground) and increased their safety margin.

With modern gliders, catastrophic loss of control at high speed has become rare, but pilot tactics have evolved: many pilots now arrive very low at ESS to reduce their speed section time, then climb again before flying to goal. This behavior reduces the intended safety margin that ESS was designed to provide, while keeping the timing point away from the physical goal field where results are most visible.

1.2 Why This Proposal Is Needed

An elevated goal restores the original safety intent of ESS by requiring pilots to maintain altitude through the final glide. It also brings the decisive timing point back to the physical goal location, where crowds and cameras gather, increasing the spectator appeal of competition hang-gliding and paragliding. It does this without reducing fairness or safety.

This proposal introduces an optional tool for task setters to design safer and more exciting XC tasks without dismantling the proven ESS+ground-goal model.

2 Proposed Change / Action

2.1 Existing rules

Section 7F (XC Scoring) defines ESS and goal as separate horizontal features, with time taken at ESS to calculate each pilot's Time Points. Goal does not have any altitude requirements and only affects whether a pilot is considered to have completed the task and will therefore receive full Distance Points and validate their Time Points.

2.2 Proposed Modification / New Rule

This proposal introduces **elevated goals** as an optional alternative to the classic ESS+ground-goal structure in Section 7F (XC Scoring).

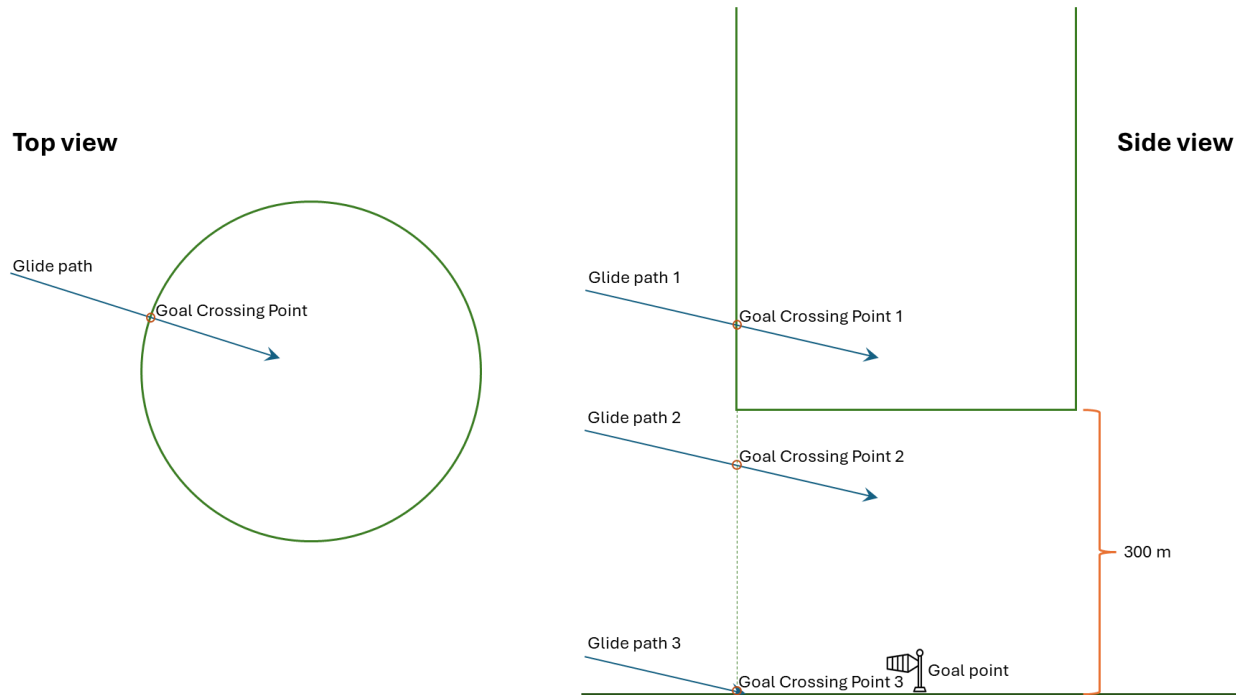


Figure 1: Elevated goal concept

The concept of the elevated goal is shown in Figure 1:

1. As in any other turnpoint cylinder, the first tracklog point inside the cylinder counts as the crossing point (top view).
2. In addition, the altitude at which this crossing happens now counts (side view):
 - a. The goal elevation is given in meters above goal altitude. The default is 300 m.
 - b. The maximum penalty for underflying the elevated goal is 20% of the pilot's Time Points.
 - c. If the crossing point lies 300 m or more above the goal altitude (glide path 1), the pilot receives their full Time Points.
 - d. If the crossing point lies less than 300 m above the goal altitude (glide path 2), the pilot is given a Goal Altitude Penalty (a reduction of their Time Points), which is very small at the top, and bigger towards the bottom.
 - e. If the crossing point is at or below goal altitude (glide path 3), the pilot's Goal Altitude Penalty is equal to 20% of their Time Points.

2.2.1 Definition

An **elevated goal** is a goal semicircle or cylinder that sits above the published goal altitude. The elevation above goal is by default 300 m but can be increased for each task. When an elevated goal is declared, it implicitly also serves as the End of Speed Section (ESS): the point where a pilot's race time is taken.

2.2.2 Altitude Measurement

The elevated goal is evaluated using the same altitude reference and measurement method that Section 7F prescribes for all other altitude evaluations in XC competitions.

2.2.3 Crossing Condition

The crossing condition for an elevated goal is the same as for a classic goal: The first tracklog point inside the goal shape (cylinder or semi-circle including tolerance zone), after having crossed all

previous control zones, counts as the crossing point. Goal Crossing Time and Goal Crossing Altitude are derived from that crossing point.

2.2.4 Goal Altitude Factor

If a pilot crosses the horizontal goal but is below the required 200 m elevation, the pilot's Time Points are reduced according to the pilot's actual crossing altitude, using a smooth S-shaped curve identical to the Launch Validity function already defined in Section 7F.

Define the Goal Altitude Factor as follows:

- Let h_{goal} be the published goal altitude (meters AMSL).
- Let *elevation* be the altitude difference between h_{goal} and the lower goal limit, in meter.
- Let $h_{\text{goal_crossing}}$ be the pilot's altitude when crossing goal, using the standard Section 7F altitude reference.
- If $h_{\text{goal_crossing}} \leq h_{\text{goal}}$, set GoalAltitudeFactor = **0.8**.
- If $h_{\text{goal_crossing}} \geq h_{\text{goal}} + \textit{elevation}$, set GoalAltitudeFactor = 1.
- Otherwise, compute:

$$AR = \frac{h_{\text{goal_crossing}} - h_{\text{goal}}}{\textit{elevation}}$$

$$\text{GoalAltitudeFactor} = 0.8 + 0.6 \cdot AR - 0.6 \cdot AR^2 + 0.2 \cdot AR^3$$

This gives a value between 0.8 and 1.0 for the Goal Altitude Factor. A graphical representation across the default **300 m** elevation is given in Figure 2.

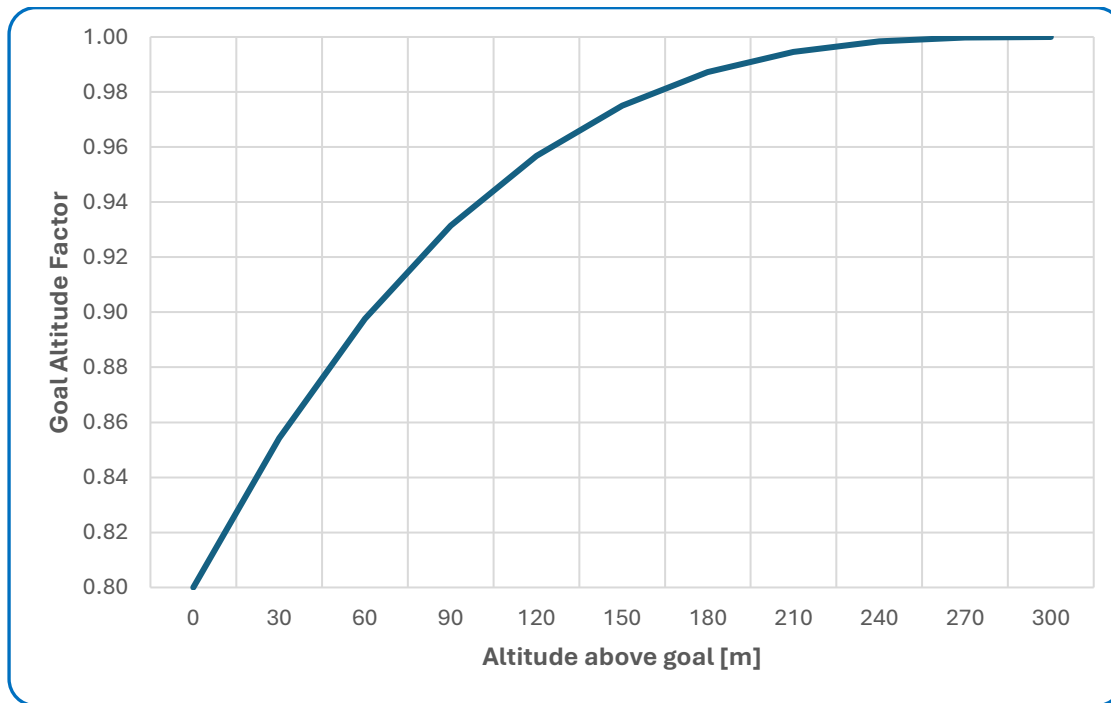


Figure 2: Goal Altitude Factor

2.2.5 Use in Scoring

The pilot's Time Points for the task are then adjusted by multiplication with the Goal Altitude Factor. A Goal Altitude Factor of less than 1.0 therefore leads to a **Goal Altitude Penalty**. This penalty is simply a reduction of the pilot's Time Points; all other points stay the same.

See **Table 1** for examples, based on 450 Time Points for the pilot. Note how the curve ensures that pilots who are separated by only a few meters vertically near the elevated goal receive very similar

Goal Altitude Penalties. Larger vertical differences are required to create significant Time Points differences.

Altitude above goal [m]	Time Points reduction (of 450)	Time Points (of 450)
≥276	0.0	450.0
275	0.1	449.9
260	0.2	449.8
240	0.7	449.3
200	3.3	446.7
150	11.2	438.8
100	26.7	423.3
50	52.1	397.9
1	89.1	360.9
≤0	90	360.0

Table 1: Time Points reduction (based on 450 Time Points)

To put the Goal Altitude Penalty into perspective: Arriving as first in goal at 200 m instead of 300 m above goal is equivalent to arriving second by 10 seconds in a 1-hour task, by 14 seconds in a 2-hour task, and by 17 seconds in a 3-hour task.

2.2.6 Applicability

For FAI Category 1 and Category 2 cross-country events, the task setters may declare any goal semi-circle or goal cylinder as an elevated goal, and have it scored according to the rules above. If a goal is not declared as elevated, it is scored as a normal ground goal with a separate End of Speed Section. A goal is treated as elevated if any of the following conditions apply:

1. No ESS is declared => goal implicitly becomes ESS and therefore an elevated goal.
2. Declare an ESS that is identical with goal (same waypoint, same radius), with no other turnpoints between the two => goal implicitly becomes an elevated goal.
3. Explicitly declare goal as elevated => any previously declared ESS is turned into a regular turnpoint cylinder.

In practice, this means that when a goal is declared as elevated (explicitly or implicitly), pilots must arrive at least 200 m above the published goal altitude to keep all their Time Points; arriving lower does not change Distance Points and Leading Points (and, in hang-gliding, Arrival Points) but reduces Time Points according to Table 1.

3 Rationale

The rationale for this proposal is described in the Background / Context section. In summary, elevated goals restore the original safety intent of ESS under modern equipment and tactics and align the timing point again with the goal location. The main expected benefits are listed below.

3.1 Benefits of Elevated Goals

1. **Restores Safety Intent:** By requiring altitude through the final glide, elevated goals restore the safety margin that ESS was designed to provide.
2. **Brings Timing Back to Goal:** Spectators, photographers, and media see the winners arriving at goal in the order in which they receive their Time Points, increasing engagement even if the physical goal is not visible from ground level.
3. **Maintains Fairness:** The S-shaped penalty for underflying the elevated goal ensures that small vertical differences near the goal’s limit do not unfairly reverse pilot rankings.

4. **Optional, Not Mandatory:** Task setters can choose elevated goals only when the task layout and safety situation warrant them.
5. **Re-uses Established Math:** The penalty curve is identical to the Launch Validity function already proven in Section 7F, requiring no new algorithms or software innovation.

4 Potential Impact

4.1 Impact on Paragliding and Hang-Gliding Competitions

Positive:

- Removes risk of high-speed flight into ESS
- Tasks can be designed with greater safety margins at goal
- Spectacle and media appeal increase

Potential Concern:

- Pilots must adapt tactics slightly
- Meet Directors must clearly brief the elevated goal concept, altitude measurement and Goal Altitude Penalty

4.2 Impact on Pilots

Positive:

- Safer final glide phase
- Clear, transparent altitude evaluation
- Continuous scoring reward for climbing before final glide (no hard pass/fail at a goal altitude threshold)

Potential Concern:

- Requires understanding the 200 m span and the penalty curve
- Pilots accustomed to "make goal or not" must learn the gradient
- Until navigation devices allow definition of elevated goal tasks and adjust final glide calculations accordingly, pilots must manually increase goal altitude by 200 m

4.3 Impact on Competition Organizers

Positive:

- A new tool to design safer tasks without overhauling existing ESS+goal logic
- Flexible, optional feature that increases task design options

Minimal Burden:

- Uses existing altitude references and measurement
- no new hardware or field procedures required.

4.4 Impact on CIVL Operations

Minimal:

- A light addition to Section 7F
- no governance or administrative overhead beyond publishing the rule amendments

4.5 Impact on Navigation Devices and Software

None to Minimal:

- Elevated goal tasks can be entered into existing software: define goal as ESS and manually increase the goal waypoint's altitude by **300 m**.

The changes required for full support are: Recognizing elevated goal tasks and increasing the goal altitude by **300 m** for all final glide calculations. For higher elevations, the value must be entered as part of the task definition.

4.6 Impact on Scoring Software

Required:

- Scoring software must implement the Goal Altitude Factor calculation (simple polynomial)
- FsComp, Airscore and other approved scoring programs will need a minor update to handle the altitude ratio and penalty curve.

Effort estimate:

- 4-8 hours per scoring platform

5 Implementation Timeline

- **Effective date for 2026 competitions:** May 1st, 2026.
- **Transition period:** None required. Elevated goals are optional; existing ESS+ground-goal format remains available.
- **Software implementation deadline:** Approved scoring software must support elevated goals by May 1st, 2026.

6 Financial Implications

Minimal. This proposal requires no new hardware, training programs, or operational costs for CIVL, NACs, or organizers. Scoring software updates are estimated to take 4 to 8 hours.

7 Related Documents / References

- FAI Sporting Code, Section 7 – Common 2025
- FAI Sporting Code, Section 7A – Cross Country 2025
- FAI Sporting Code, Section 7F – XC Scoring 2025 V1.0
- FsComp – CIVL Scoring Software: <https://fs.fai.org>
- AirScore – CIVL Online Scoring Software: <https://airscore.cc>