EABS MANUAL

EHF CLUB COMPETITIONS
SEASON 2024/25

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This Electronic Advertising Board System Manual gives you an overall introduction on the regulations of the EHF Club Competitions concerning the use of Electronic Advertising Board Systems (hereafter EABS).

1   Mission statement

The participating clubs in the EHF Champions League and EHF European League and must provide an EABS in form of an LED or LCD perimeter board system. This system must be used on the long- and short sides of the playing court during all home matches. Each club confirms with its registration for EHF Champions League and EHF European League that an EABS, fulfilling the minimum requirements, will be provided.

The system, approved by EHFM, shall be used during the whole season. In case of any changes (e.g. different system for a specific match) the club must inform EHFM immediately and ask for approval to use an alternative EABS. Costs arising through late or wrong information and changes in the EABS specifications must be covered by the home club.
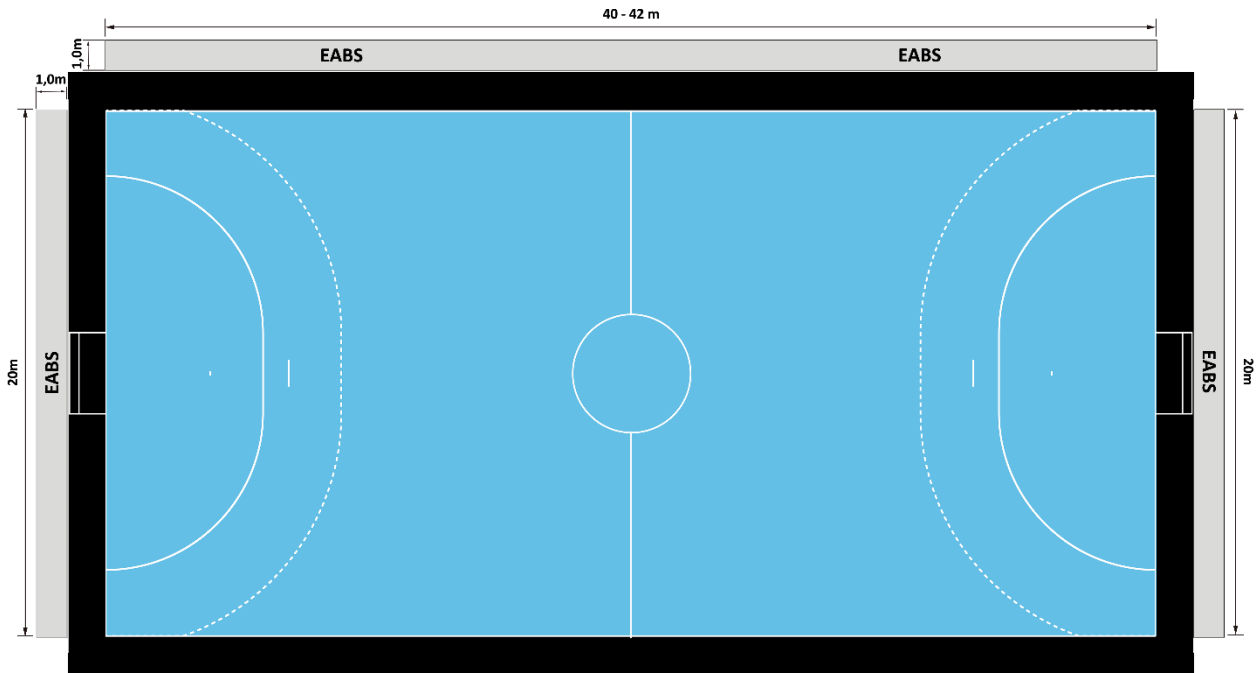
2   Electronic Advertising Board System

The EABS (LCD or LED perimeter boards) must be minimum 80 m in total – minimum 40 m and maximum 42 m on the long side (opposite to the main TV camera) and 20 m on each short side (behind the goal) of the playing court. The total height must be minimum 0,8 m and maximum 1,1 m. Only an EHF/M approved EABS can be used for EHF Club Competitions.

Two rows of EABS on top of-, or behind, each other are not permitted. The set-up of the EABS is to be carried out as follows:

2.1   Setup

2.1.1   A minimum 40 x 1 m EABS must be placed on the long side of the playing court (opposite to the main TV camera & player benches). The maximum length of the long side EABS is limited to 42 m. A 20 x 1 m EABS must be placed on each short side of the playing court.
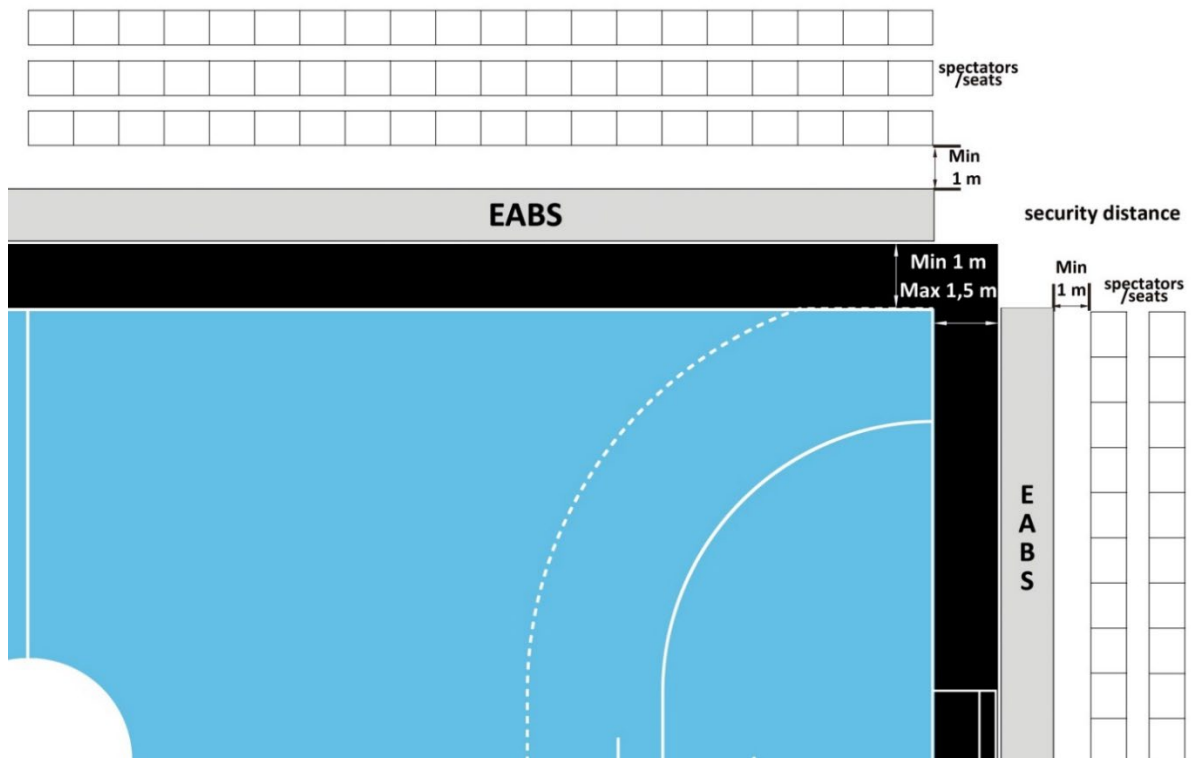
2.1.2   The positioning of the EABS must be without any gaps or interruptions (with exception of the corners of the playing court).

Graphic 1: Set-up EABS on the long- and short sides (main production side)

2.1.3   The distance between the playing court outline and the EABS must be at least 1m
          and is limited to a maximum of 1,5m. In any case, it must be placed with only the
          official EHF Champions League and EHF European League Floor, and no gaps,
          visible.

2.1.4   Distance between EABS and the spectators/seats must be at least 1m.

Graphic 2: Set-up of EABS distances

2.1.5   Open corners for player's entrance must be assured. It is not permitted to place any objects or staff (e.g. photographers, mascots, other items) in front of the EABS, which may limit the visibility of the advertising boards. In case the requested set-up cannot be implemented due to the infrastructural configuration of the playing hall, exceptions need to be approved by EHFM before the season start.

A combination of electronic and static boards is not permitted. In any case the long side (40 - 42m) and both short sides (20m each) of the court shall be surrounded by an EABS.

2.1.6   The club must assure that the EABS control desk is stationed so that the technician can react quickly in case of any problems, interruptions or damages to the EABS or its displayed contents. If such a position is not possible, EHFM must be informed and a TV control monitor with access to the TV world feed must be installed.

3   Power supply

The club needs to assure an appropriate playing hall infrastructure in terms of power supply and security that allows the set-up of an EABS. In this context each club needs to be aware of the regulations in the country of operation and is obliged to carry out the necessary precaution.

4   Setup rules

4.1   Content

In order to avoid any disturbances of/during the match (e.g. for players, match officials or spectators) certain colours and/or special effects will not be permitted if they are deemed to be disruptive.

Advertising for specific moments (goals, penalty shoot etc.) are not permitted.

Further, specific references to the match (e.g. players, match officials, teams) are forbidden.

All messages of political, religious, violent and/or pornographic nature are strictly forbidden.

Each club sponsor animation, which should be included into the playlist needs the approval of EHFM beforehand. Therefore, a preview file of each new animation must be provided to EHFM prior to the start of the season.

4.2   Animations and effects

Animations of EHFM sponsors and partners will be generated and distributed by EHFM according to the EABS specifications, provided to the club before the season. The production responsibility of the club sponsor animations lies with the home club and must be according to the following guidelines.

One sponsors animation must have a **fixed length of 30.00 seconds**. Each sponsor animation must be presented over the full length of the EABS (full rotation) on the long- and short sides. A multi-sequence (different sponsors presented at the same time) is not permitted.

For each sponsor, more than one movement/effect at the same time and/or combined effects is not permitted. In total the number of different movements (change of direction) per sponsor/animation is limited to 2 movements.

Horizontal and vertical movements may not exceed 0.5 m per second. Any adaptations of motion speed within one sponsor's sequence are not permitted.

In general fade in and fade out effects are only allowed if as of at least 2 seconds for messages and pictures is realized. The same applies to special effects such as zooming or flashing effects. Such effects are allowed only two times each 30 seconds and need to be appropriate to motion speed and brightness. Blinking effects are not allowed as they may be deemed disruptive.

4.3   Playlist

The EABS playlists for each match will be generated by EHFM. The club will receive a master playlist at least three (3) days before the respective match (EHF CL & EHF EL). Sponsor minute allocations as well as the exact position for every single animation will be defined in the playlists. The set-up of the master playlist is mandatory for the home club and will be checked by a Marketing Supervisor onsite, if nominated, before each match.

4.4   Duration

The operation of the EABS with the defined playlist must be guaranteed from hall opening (approx. 2 hours before throw-off) until 15 minutes after the match.

4.5   Technical

Brightness, colour temperature and saturation of the EABS will be set by the operator prior to the match in correspondence with the TV production. Brightness, colour temperature and saturation may not be adjusted for any specific message and must comply with the TV picture without any interference (e.g. without reflection on playing court). The reference point for the colour settings must always be the main colour of the EHF Champions League or EHF European League Title Sponsor. The switch from message to message should be adjusted softly and not abruptly. Strong cuts of colours from bright to dark and vice versa need to be avoided.

5   LED specifications

5.1   Key dimensions

- 3-in-1 SMD (Surface Mounted Device) technology

- Minimum pixel pitch: 10 x 10 mm real

- Total length: 80 m (40 m long side and 20 m on each short side)

- LED life me of minimum 100.000 hours if operated in average with 50 % brightness

- Active area per cabinet height: min. 75 cm, max. 100 cm
  (view disturbance of spectators must be avoided in any case)

- Cabinet size total height: min. 80 cm max. 110 cm (incl. foot cover & top cover).
  Overall depth including support structure maximum 70 cm

- Refresh rate: min. 2.800 Hz – in general the refresh rate has to be adjustable.

- Maximum distance 5 cm between bottom of the system to ground if 0° tilted.
  Gaps between bottom of system and ground need to be closed.

5.2   Optical dimensions

- Horizontal viewing angle: min. 140°

- Vertical viewing angle: min. 60°
  Usage of soft shader construction for shield of flood light

- Light output (100%): Adjustable between 250-1000nits without any loss of bits.

- Colour temperature 3.200 Kelvin to 7.500 Kelvin in minimum 8 steps adjustable

- Optical homogeneity of the surface

- True colour photos of professional photographers

- System calibration possible

5.3   Mechanical dimensions

- Rear service vents for the exchange of components during the match
  (the back of the system has to be secured and needs to include mechanism to
  easily open each cabinet).

- Quick-changeable modules. Module / cabinet change time < 3 minutes, without
  affecting running system - i.e. hot-swappable.

- Mechanism for access gates, without any signal interruption, if players entrance
  at long side is required due to construction of playing hall.

- Mechanical connectors to align the system and minimize gaps between cabinets
  (max. +/- 1 cm).

- Black non-glare finishing on face-plate (front).

- Black/dark neutral colours on cabinet (back).

- Protection of IP 40.

- Maximum of 15 cm front-overlap of foot stands.

- Front side of foot stands must be safely covered with rubber protection (hardness of approx. 50 shore) if the foot is higher than 10mm.

- Impact protection for LEDs and players. Rubber louvers front and top to protect cabinets from impact and players from injuries (if higher than 2,5mm).

- Ergonomic handles on back side of cabinets in order to adjust cabinets in line (if side handle cannot be used).

- Technical service department located max. 72 hours from call to service.

- Three (3) years warranty and six (6) years spare part availability.

- Three (3) % spare part coverage for all spare part, which are relevant and required for operation, e.g. 1 spare module, computer, controller, power and data cables.

5.4   Electrical dimensions

- European-voltage system (220-240V / 380-415V, 50Hz).

- Power loss limited to max. 5 cabinets, not tolerable to affect other cabinets.

- UPS (uninterruptible power supply) buffering for controller and computer.

- UPS buffering for fiber optic converter.

- CEE standard power connectors for 400V.

- High quality connectors with EU standard for 240V.

- All exposed cabling (incl. data cabling) must be protected.

- All cables routing between the cabinets protected internal transmission (e.g. data, power).

- Only one breaker (16A or less) incl. one RCD (Residual Current protective Device) 33mA per end power circuit, of max. 5 cabinets.

- RCD (Residual current protective device) 300mA on final 125A/63A circuits 3P + N including surge protection.

- EMC (electromagnetic compatibility) protection to highest EU standards and regulations.

- The home club (owner/licensee of system) is responsible for all required certificates and approvals for definite and/or temporary operation required for the country and location of operation, e.g. CE, ROHS, EN, DIN, etc.

- Quick-changeable power-supplies installed within each LED cabinet.

- System protection for usage in arena and material configured for flexible usage including regular set-up/dismantling (break-proof). Housing: solid rubber, with handle, frame joint cabinet cover with high quality materials. Housing must not have contact with any electronical components.

- All performances working with 50 and 60 Hz.

- Working temperature 0° up to +50°.

- Required power supply for operation in 100% brightness (full white) with maximum 63A.

5.5   Data Interfacing

- Individual control of brightness, gamma, colours of every single module and cabinet must be assured.

- Default graphics in case of total data connection loss with server with auto-switch feature installed and enabled set to static picture. All animation files must be downloaded prior to the match.

- In the event of a single cabinet change memory software must transmit information like current data, colours, brightness, etc. to the new cabinet (automatic calibration of replaced modules during operation).

- Data cabling from FoH controller locations to the two corners (redundant data connector); ring loop configured, if one connection fails an automatic switch activates data source from the opposite section.

- All data cables (fibre, CAT, BNC, etc.) high torsion and elastic PUR coating.

- Integration of redundant back up computer to ring loop configuration per automatic or manual switch in case main computer or software breaks down.

- Display on cabinet with information of power and data state (main back-up).

- System back to full spec control after pitch power loss in less than 1 minute.

5.6   Software

- Provision and operation of play-out software by club (owner/licensee of system).

- Possibility to integrate external play-out software.

- Integration and play-out of files with format .mov-, mp4 (uncompressed) or .avi (uncompressed) without any further file conversion, of files with different durations (5 seconds to 2 minutes) and with frames per second of 25 fps to 60 fps.

- System viewed and operated as one single screen by control software.

- Flexible configuration of size of file / animation sections. Presentation of 1 to 5 clients with single animation files within one sequence.

- Integration of centre board animation section possible with flexible and easily adaptable size from 3.

- Programming of min. 10 different playlists possible. Easy switch from playlist to playlist without any time delay.

- Playlist preview function.

- Flexible start of playlist from either first line or defined line.

- Easy playlist programming and flexible editing (e.g. drag & drop-, copy & paste function).

- Content feed from only one PC in order to guarantee a synchronized picture.

5.7   Transport

- Transport casing / brackets designed for efficient storage and shipping (for transportable systems).

- Transport casing / brackets need to fix the cabinets during transport.

- Transport cases / brackets need to be transportable with forklift from both sides and with pallet truck from at least one side.

- High quality flight cases (heavy duty). Stackable flight cases, 100 mm blue wheels, big butterfly catcher, one large hinge for all equipment apart of the cabinets.

6   LCD specifications

6.1   Key dimensions

- Minimum pixel pitch: 1 x 1 mm.

- Total length: 80 m (40 m long side and 20 m on each short side).

- LCD monitor life me of minimum 50.000 hours.

- Active area per cabinet height: min. 75 cm, max. 100 cm
  (view disturbance of spectators must be avoided in any case).

- Cabinet size total height: min 80cm. max. 110 cm (incl. foot and top cover). Overall depth including support structure maximum 70 cm.

- Maximum distance 5 cm between bottom of system to ground if 0° tilted. Gap between bottom of system and ground need to be closed.

- Contrast 2400:1.

6.2   Mechanical dimensions

- Quick-changeable monitors.

- Non-glare finishing on face-plate (front).

- Black/dark neutral colours on cabinet (back).

- Maximum of 15 cm front-overlap of foot stands.

- Front side of foot stands must be safely covered.

- Impact protection for monitors and players.

- Two (2) % spare part coverage for all spare part, which are relevant and required for operation, e.g. 1 spare module, computer, controller, power and data cables.

6.3   Electrical dimensions

- European-voltage system (100V-240V AC, 50/60Hz Monitor).

- CEE standard power connectors for 400V.

- High quality connectors with EU standard for 240V.

- All exposed cabling (incl. data cabling) must be protected.

- All cables routing between the monitors protected internal transmission (e.g. data, power).

- Only one breaker (16A or less) incl. one RCD (Residual Current protective Device) 33mA per end power circuit.

- Fuse for each single monitor, MCB 3A + 3x RCD 40A 30mA 4pol.

- EMC (electromagnetic compatibility) protection to highest EU standards and regulations.

- The home club (owner/licensee of system) is responsible for all required certificates and approvals for definite and/or temporary operation required for the country and location of operation, e.g. CE, ROHS, EN, DIN, etc.

- System protection for usage in arena and material configured for flexible usage including regular set-up/dismantling (break-proof).

- All performances working with 50 and 60 Hz.

- Working temperature 0° up to 40°C / 20% - 80% humidity.

6.4   Data interfacing

- Individual control of brightness, gamma, colours of every single monitor must be assured.

- All data cables (fibre, CAT, BNC, etc.) high torsion and elastic PUR coating.

- System back to full spec control after pitch power loss in less than 5 minutes.

6.5   Software

- Provision and operation of play-out software by club (owner/licensee of system).

- Possibility to integrate external play-out software.

- Integration and play-out of files with format .mov-, mp4 (uncompressed) or .avi (uncompressed) without any further file conversion, of files with different durations (5 seconds to 2 minutes) and with frames per second of 15 fps to 60 fps.

- Integration of centre board animation section possible with flexible and easily adaptable size.

- Programming of min. 10 different playlists possible. Easy switch from playlist to playlist without any time delay.

6.6   Transport

- Transport casing / brackets designed for efficient storage and shipping (for transportable systems).

- Transport casing / brackets need to fix the monitors during transport.

- Transport cases / brackets need to be transportable with forklift from both sides and with pallet truck from at least one side.

- High quality flight cases (heavy duty). Stackable flight cases, 100 mm blue wheels, big butterfly catcher, one large hinge for all equipment apart of the cabinets.

7   Marketing Supervisor

EHFM will be represented onsite, if nominated, by a Marketing Supervisor, who is responsible for verifying the set-up of the EABS, the TV test as well as confirmation of the final playlist on the match day. Any variances from the approved EHFM playlist are not permitted.

8   Deadlines

Before the start of the season:	Providing EHFM with the technical specifications of the club's EABS with request for approval, along with the specifications required to produce animations.
Before the start of the season:	Club provides EHFM with a preview file of a new club sponsor animation, with request for approval.
At least 3 days before the match:	EHFM provides clubs with the final master playlist for the respective match.

9   Legal statement

All clubs that are participating in EHF Champions League and EHF European League are fully responsible for the proper organization, set-up and operation of the EABS according to the outlined criteria above.

The set-up of the EABS, as well as the software operation during the match, by skilled staff is mandatory and lies in full responsibility of the clubs. The club ensures that the responsible person for operating the EABS is aware of this catalogue of CRITERIA and will act accordingly.

All safety issues and certificates for usage of an EABS that are mandatory in the country of operation, need to be assured and verified by each club before the first use.

EHFM will monitor the compliance with this catalogue of criteria on a regular basis. In case any club should violate the conditions, EHFM reserves the right to warn and sanction the particular incident.

EHFM may modify the catalogue of criteria for usage of EABS due to any objective reasons, e.g. technical development.

In an event where the club cannot set up, organize or ensure a fully functional operation of the required/provided EABS animations, due to malfunction or other insolvable issues, the club is responsible to bear the costs for loss of EHFM income. EHFM strongly recommends the club to procure adequate insurance for this case, since EHFM will hold the club liable for any losses or damages occurring due to not fully functional operation of the required EABS animations of EHF/M sponsor, partners and suppliers.

10   Contact details

EHF Marketing GmbH
Hoffingergasse 18
1120 Vienna
Austria
+43-1-80151
implementation@ehfmarketing.com

11   List of abbreviations

- BNC: Bayonet Nut Connector
- CAT: Computer Aided Tuning
- CE: Conformité Europeene
- CEE: Commission on the Rules for the Approval of the Electrical Equipment
- DIN: Deutsche Industrie Norm
- EMC: Electromagnetic compatibility
- EN: European Standards
- FoH: Front of House
- IP: International Protection
- ISO: International Organization for Standardization
- LCD: Liquid Crystal Display
- LED: Light Emitting Diode
- PUR: Polyurethan
- PSU: Power Supply Unit
- RCD: Residual current protective device
- ROHS: Restrictions on Hazardous Substances (in Electric/Electronic Equipment)
- SMD: Surface-mounted device
- UPS: Uninterruptible power supply
- VDE: Verband der Elektrotechnik Elektronik Informationstechnik e.V.