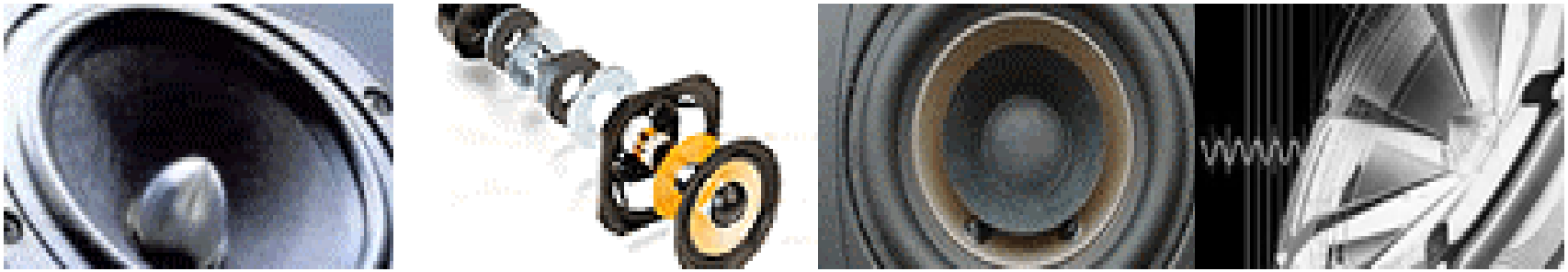


ALMA: a Key Resource for Loudspeaker Standards

ALMA是您关于扬声器标准的一项极为关键的资源

ALMA
"The International Loudspeaker Association"

Developing International Standards
发展国际标准

Using the IEC for making Loudspeaker Standards
最重要的是IEC国际电工委员会来制定标准

PROS 优点

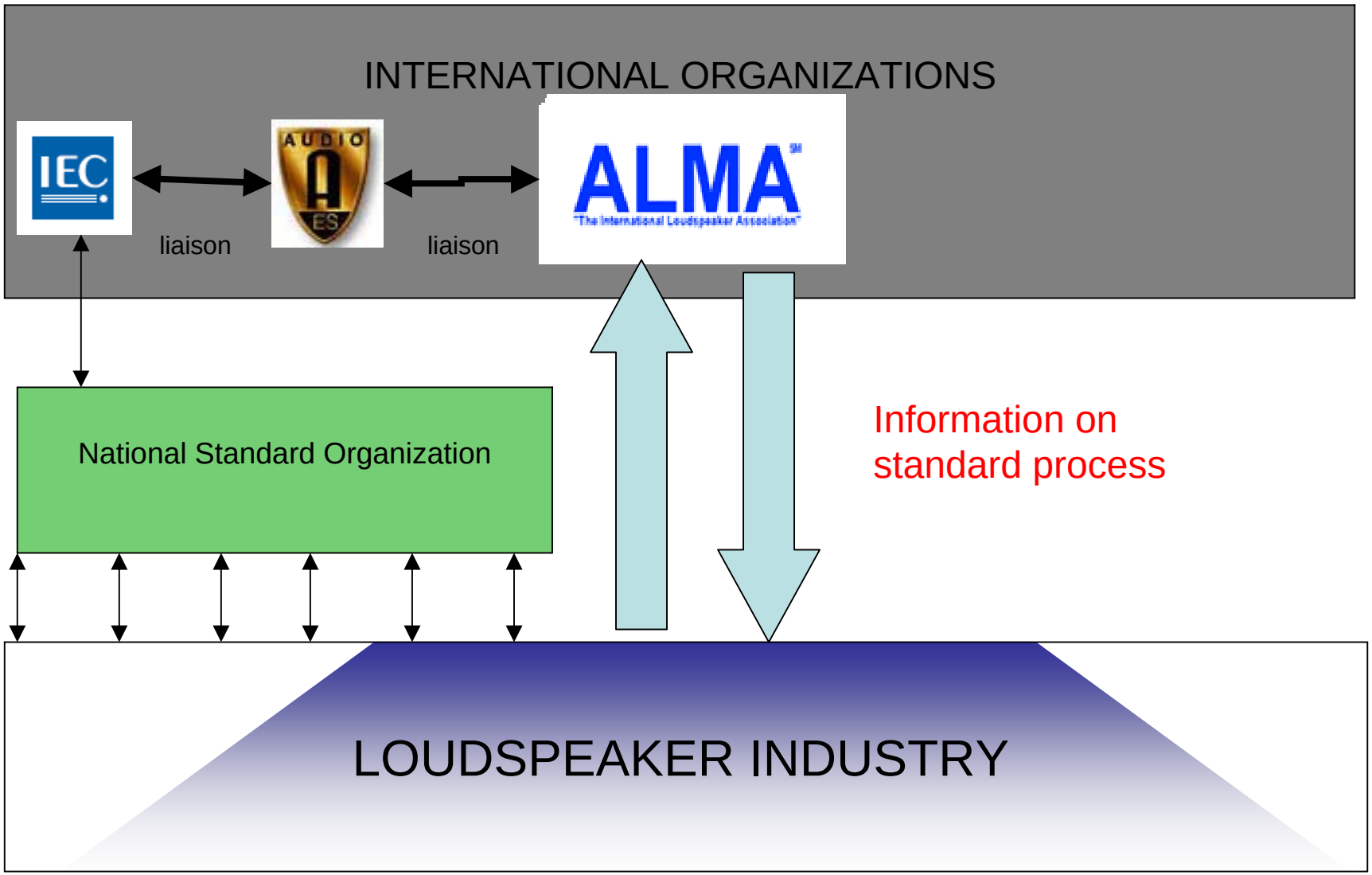
- Many countries are members of IEC
  世界上的大多数国家都已是IEC会员
- Existing methods are available for developing new standards
  已有既定程序形成标准

CONS 缺点

- Communication via national committees is slow
  透过成员国国家标准委员会来沟通意见过程非常缓慢
- Collaboration is time consuming and expensive
  协调合作耗时而成本极高
- → Few technical experts are actively involved
  由于电工委员会委员大都不是扬声器专业，所以实际上扬声器专家很少能积极参与
-

ALMA supports the standard process

ALMA这一国际专业扬声器制造商协会支援扬声器标准的制定流程
直接与业界接触沟通，再跟国际音响工程协会与IEC综合反映业界意见



ALMA Standard Activities
ALMA扬声器标准方面的活动包括:

- ALMA consolidates and amplifies the voice of the manufacturer
  ALMA综合整理并加强制造商的声音
- ALMA acts as a clearinghouse of standards
  ALMA整理分析世上各种现有扬声器相关标准
- ALMA suggests new standard activities
  ALMA建议新扬声器标准
- ALMA has a liaison with AES
  ALMA与AES有固定关于标准活动的联系
- ALMA reports about current standard activities
  ALMA报导目前正进行的扬声器相关标准活动
- ALMA develops standard documents by itself (if required)
  ALMA自己也制定扬声器相关标准(如果有必要)

ALMA reviews existing Loudspeaker Standards
ALMA分析评论现有标准，例:

- **ALMA 2003-1 Review of EIA RS-438B**
- Method for Testing Compliance of Loudspeaker Spiders

  ALMA 2003-1 评论**EIA**美国电子行业协会 **RS-438B** 扬声器支片顺性测法

- **ALMA 2005-1 Review of CEA R6 WG13 CEA-2031**
- Power Handling Ratings of Mobile Loudspeakers

  ALMA 2005-1 评论**CEA**美国消费电子协会 **R6 WG13 CEA-2031**移动便携式扬声器额定承受功率标准

- **ALMA 2005-2 Review of CEA R3 WG1 CEA-2010**:
- Standard Method of Measurement for Powered Subwoofers

  ALMA 2005-2 评论**CEA**美国消费电子协会 **R3 WG1 CEA-2010**主动式超低音标准测法

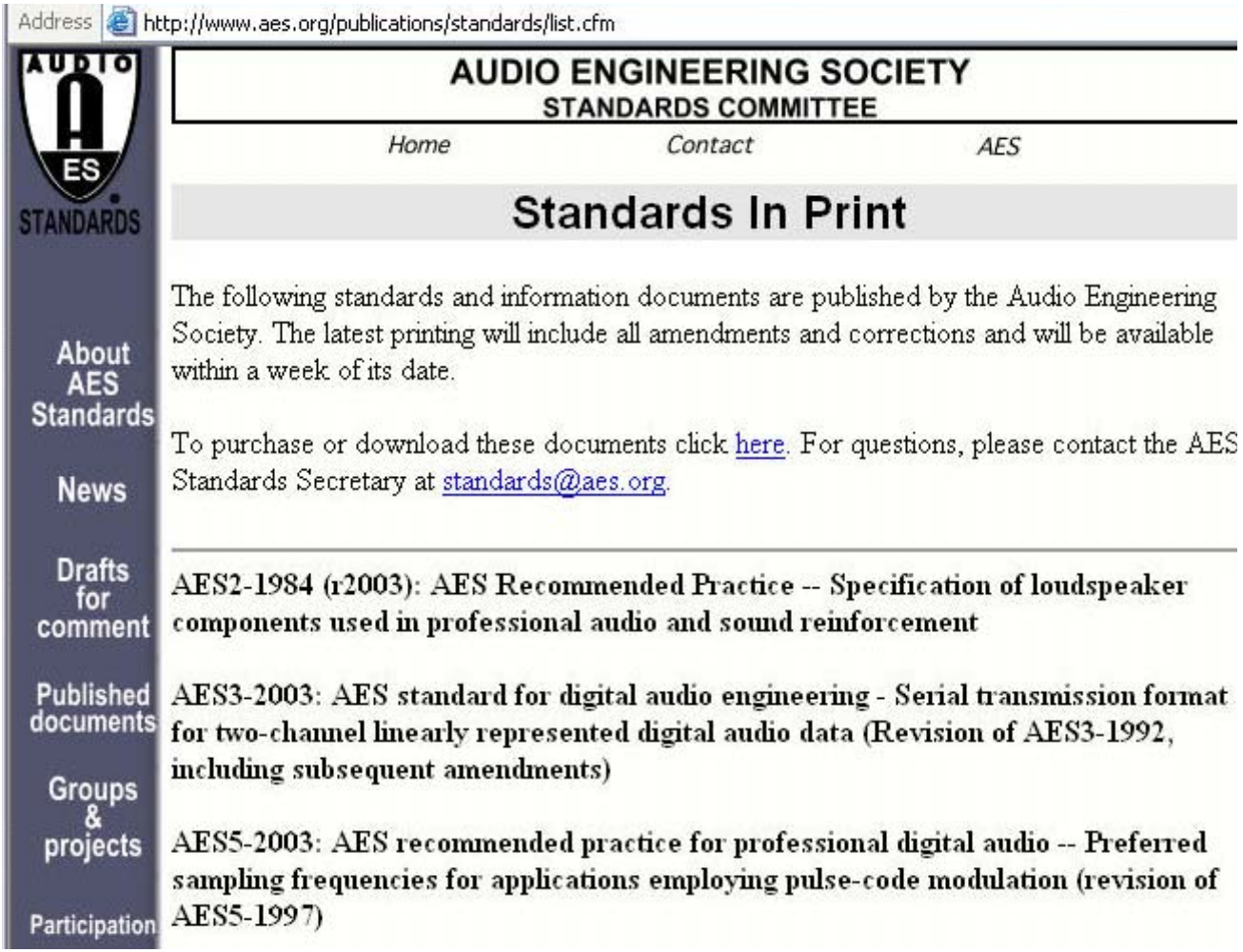
ALMA reports about AES Activities
ALMA向会员报导AES关于扬声器标准的活动，例:

- **ALMA 2004-2** **Review of AES-X129**:
- Loudspeaker Distortion Perception and Measurement
  ALMA2004-2 评论AES-X129扬声器失真感受与量测

- **Review of the AES2-R:**
- Standard for Acoustics – Methods of measuring and specifying the Performance of loudspeakers for professional applications
  评论**AES-X129** 声学标准 **-** 测量与标述专业用途扬声器表现特性的方法

Standards for Professional Audio Applications are Available from the AES via the World Wide Web:

AES有关专业音响用途标准于互联网上可购买或下载



ALMA reports about IEC Activities
ALMA向会员报导IEC关于扬声器标准的活动,例:

- Amendment of IEC 62268-5 Sound system equipment Part 5: Loudspeakers
  扬声器最重要标准IEC62268-5的增订

- Amendment of Standard PAS 62459: Elektroacoustical Transducer - Measurements of Suspension Parts
  IEC PAS62459电声传导器-悬吊部件测量标准的增订

- Amendment of Standard PAS 62458:2006: Measurement of Large Signal Parameters
  IEC PAS62458:2006 电声传导器-大信号参数测量的增订

Measurement of Suspension Parts
悬吊部件测量标准

IEC Standard PAS 62459

INTERNATIONAL ELECTROTECHNICAL COMMISSION

Electroacoustical Transducer – Measurement of Suspension Parts

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.

3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence hall be clearly indicated in

Originated and supported by ALMA members 该标准由ALMA会员发起与支援

ered responsible for any

7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or

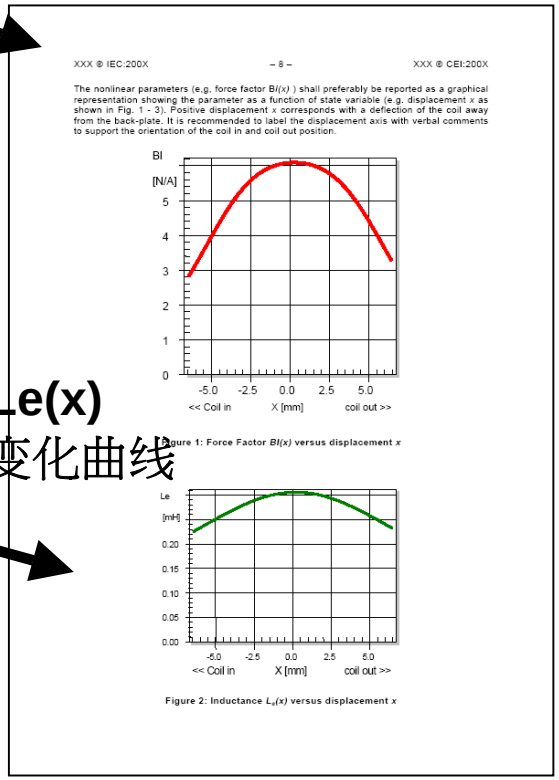
Measurement of Large Signal Parameters
大讯号参数测量

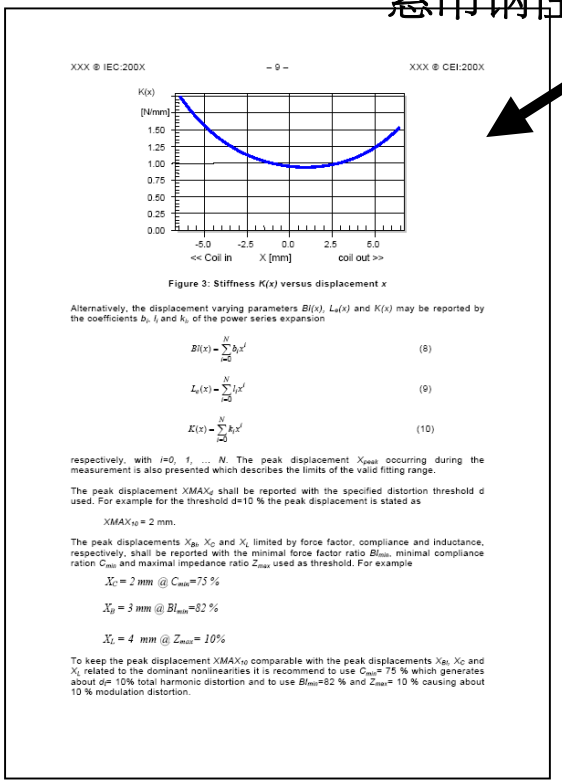
IEC PAS 62458:2006

Force Factor Bl(x)
磁力因数随振幅变化曲线

Inductance Le(x)
音圈电感随振幅变化曲线

Stiffness Kms(x)
悬吊钢性随振幅变化曲线





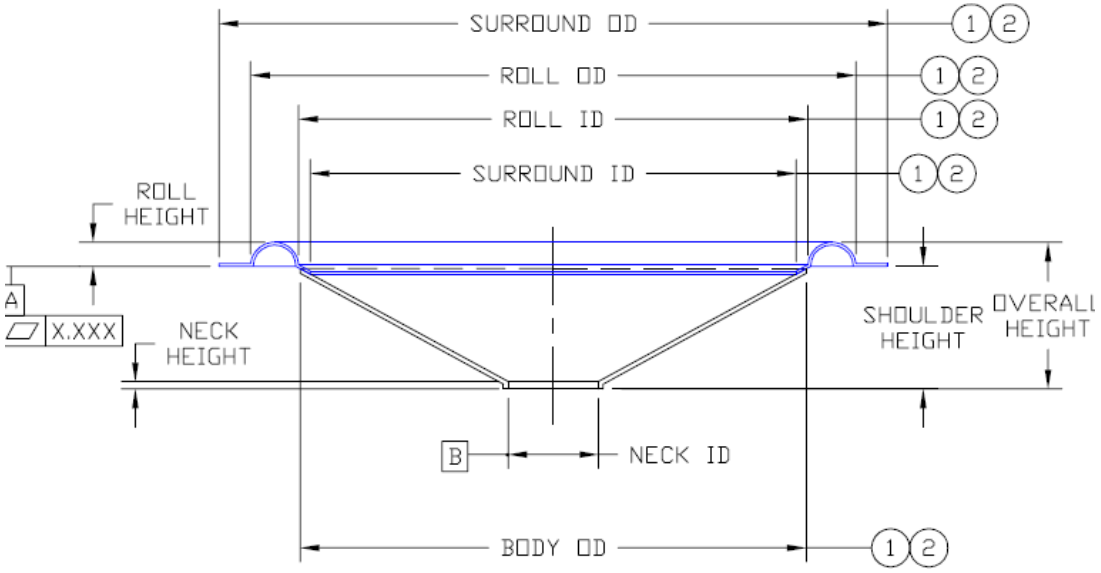
Standards published by ALMA
由ALMA自己发行的业界标准 ：

- Nomenclature Prints
  命名标示标准
- Dimensioning and Tolerancing Guidelines
  尺寸公差标示指引
- Guidelines for Measurement & Inspection
  测量及检验指引
- Test Methods
  测量方法

EXAMPLE:
例子**:**
ALMA 2003-4 Review and Reaffirm ALMA TM-100
Method of Measurement of Lowest Resonance of a Loudspeaker Cone
评论及确认**ALMA TM-100**扬声器音盆最低共振频率的测量方法

EXAMPLE: Illustrations, drawings, and guidelines
例子：插图，制图和指引

ALMA
"The International Loudspeaker Association"



音盆组装尺寸命名标示

Used by loudspeaker driver and component manufacturers

广泛为欧美扬声器厂家所遵循使用

ALMA supports new standard activities
ALMA支援建立新扬声器标准

- **ALMA 2006-2 Output Based Loudspeaker Specification**

  基于音压输出的扬声器规格

- Specification of audio-acoustic devices in terms of acoustic performance.

  基于声学输出特性的音响声学器件规格，例：不再标一米一瓦的特性，而标一米输出90dB时的特性。

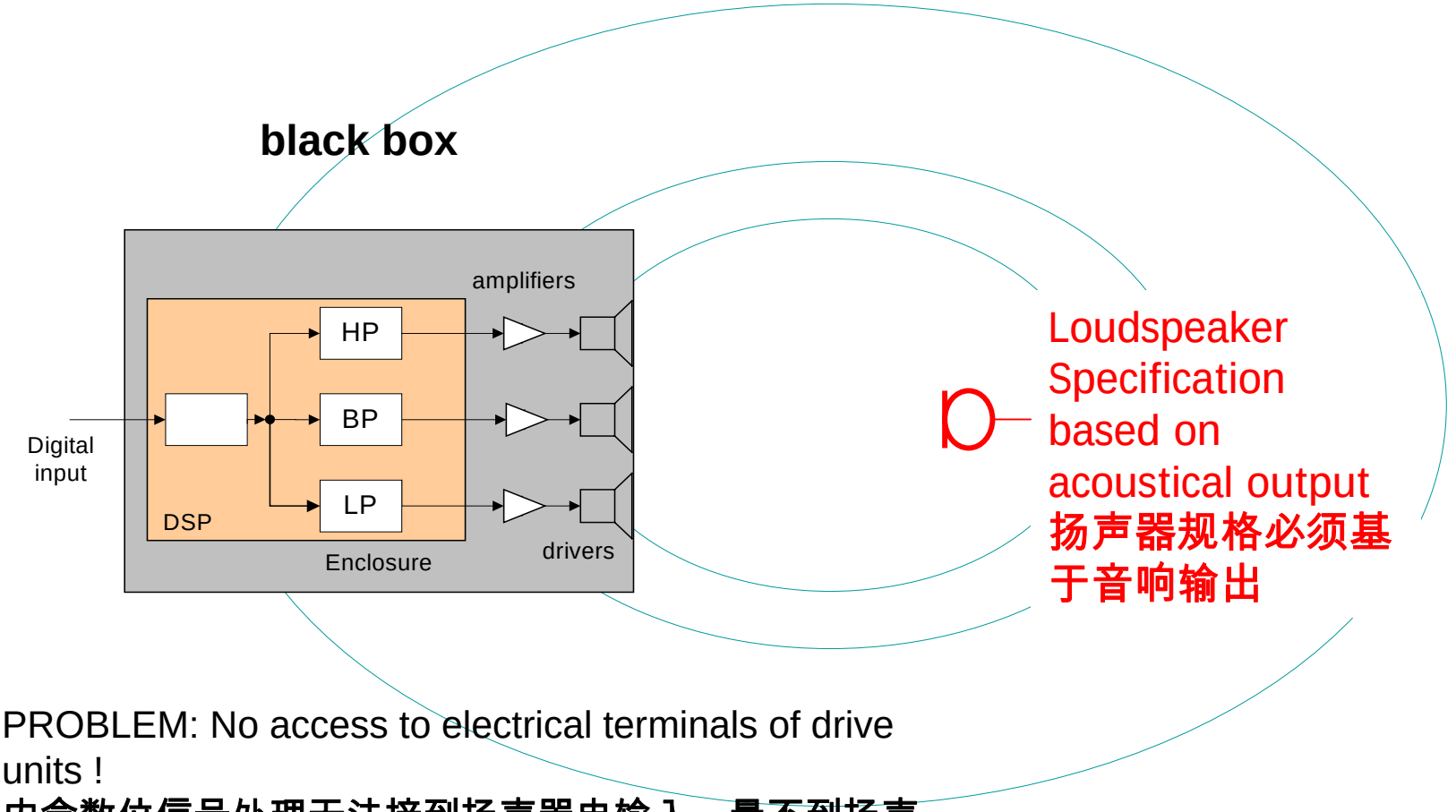
New Standard Opportunity:
制定新标准的机会

- More and more loudspeakers are using DSP and an internal amplifier 越来越多扬声器运用了DSP和内置功放，
- These „Active systems“ are not considered in current standards IEC 60268-5 and AES 2

  此类主动式扬声器在目前IEC60268-5和AES2中皆无考虑。
- For these systems, there is no access to the electrical terminals...cannot use old methods.

  这些系统我们无法接到扬声器电输入端，无法适用现行标准的传统测法。
- → We need a new standard ! 我们绝对需要新的扬声器测试标准

How to measure Active Speakers ?
如何测量主动式扬声器



PROBLEM: No access to electrical terminals of drive units !

内含数位信号处理无法接到扬声器电输入，量不到扬声器输入电压或几瓦

One of the many benefits of joining ALMA:
众多加入ALMA的益处之一:

Access and Influence in International Standards
参与及影响国际标准游戏规则的制定