

Customer Actuated Sounds (CAS)

Definition & Origins of a New Term

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What is CAS? - Origins

- Originated in the Automotive Industry
(General Motors - circa 2001)
- Name for New Group in the N&V Organization
 - Responsible for Systems Not Covered by Other Groups
- Need for Distinctive & Descriptive Name
 - To Identify Vehicle Systems of Responsibility
 - To Stop Confusion with Previously Used Names:
 - Auxiliary Systems (...also used by Powertrain)
 - Power Accessories (...also used by Powertrain)

What is CAS?

- Example Vehicle Systems of Responsibility
 - Side Closures (Side Doors–Hinged and Sliding –Manual and Power)
 - Front Closures (Hood)
 - Rear Closures (Decklid, Tailgate, Liftgate, Liftglass, etc.)
 - Power Seat Systems
 - Power Window
 - Power Mirror
 - Power Locks
 - Glovebox
 - Center Console
 - Seat Belt Buckle
 - Wiper Systems
 - Turn Signals / Chimes

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A Quandary:

Some are manually actuated.

Some are power actuated.

How to describe as a unified group?

What is CAS? – A Definition

- Scope – concerns...
 - Sounds generated by direct Customer input.
 - Sounds that do not require dynamic operation of the vehicle.
 - Sounds that do not require the engine to be running
- Approach – concerns...
 - Customer Perceptions
 - Sound Quality
 - More than traditional N&V control

Why 3 Elements in the Scope?

- **Scope – concerns...** (Identification by a process of elimination)
 - Sounds generated by direct Customer input.
 - Practically all vehicle sounds originate from Customer actions but not all are from direct inputs.
 - Sounds that do not require dynamic operation of the vehicle.
 - Eliminates issues related to Chassis, Suspension, Wind noise & Road noise (covered by existing N&V groups).
 - Sounds that do not require the engine to be running
 - Eliminates issues related to Powertrain operation at idle.

Why Mention the Approach?

- The CAS focus on SQ differs from some existing N&V Groups that remain focused on the traditional N&V control approach...
 - Lower Level is Better
- Mgmt and Internal Clients need to know that...
 - some CAS issues cannot follow a traditional approach.
 - For Example - Audibility: Louder is Better but Not Too Loud.
 - many CAS requirements will not contain the traditional N&V measures that other N&V Groups use in their requirements.

Will the Name CAS Catch On?

- CAS was coined because no other name came readily to mind that fit the need.
- GM's Global Partners seemed willing to use the term, but only time will tell if CAS will become a widely used term in the rest of the auto industry.
- If there is another name for such a diverse group of systems, it does not seem to be widely used at present, at least in the published literature.

End of Presentation