A New Approach to Attacking the Noise Problem

Donald J. Schum, PhD
Vice President, Audiology

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OpenSound Navigator™

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WHY?

OpenSound Navigator™

OpenSound Navigator™

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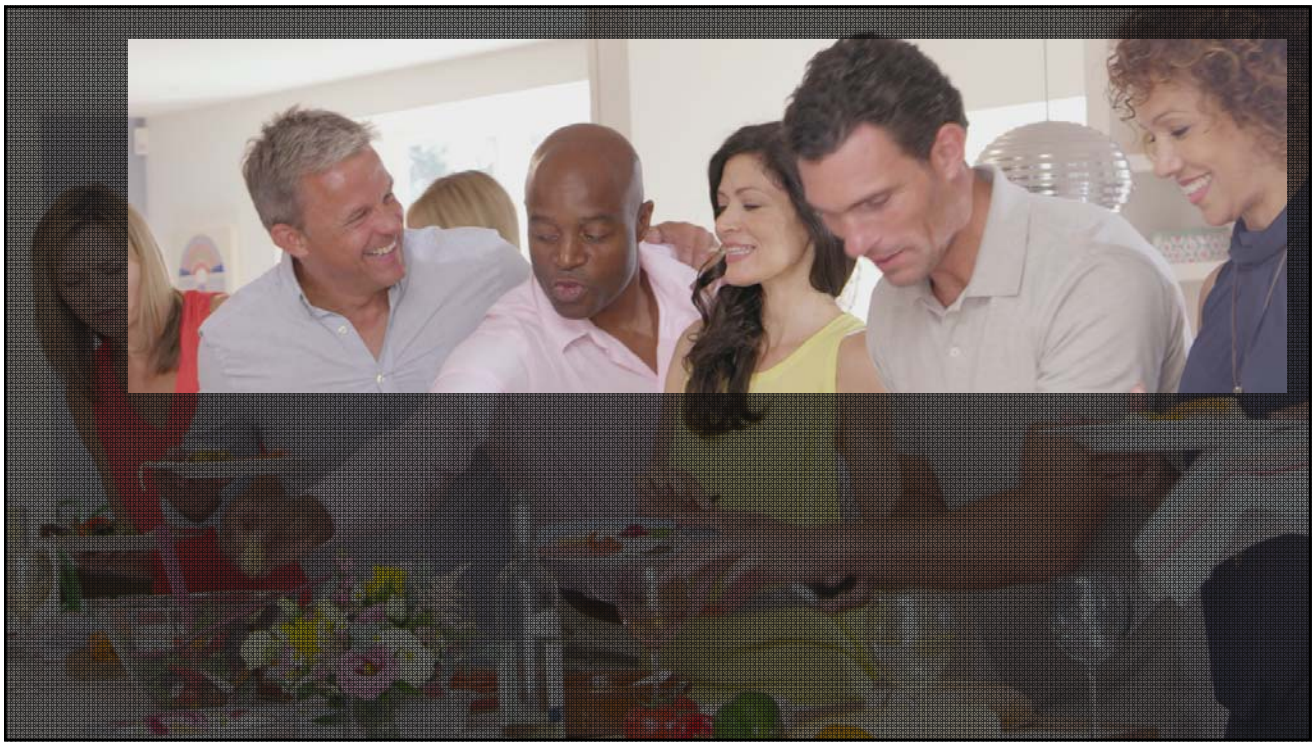
Your Patient



What is OpenSound Navigator™?

What Makes OpenSound Navigator™ Better?

- Very Powerful Engine
- Very Unique and Smart Signal Processing Ideas

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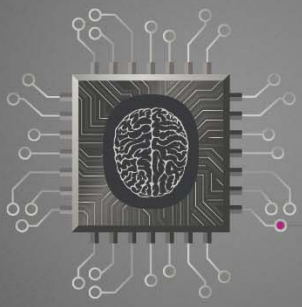
New Velox™ Platform

Power & Speed



New
Oticon Opn™

50 times faster

TwinLink™

64 frequency
band resolution

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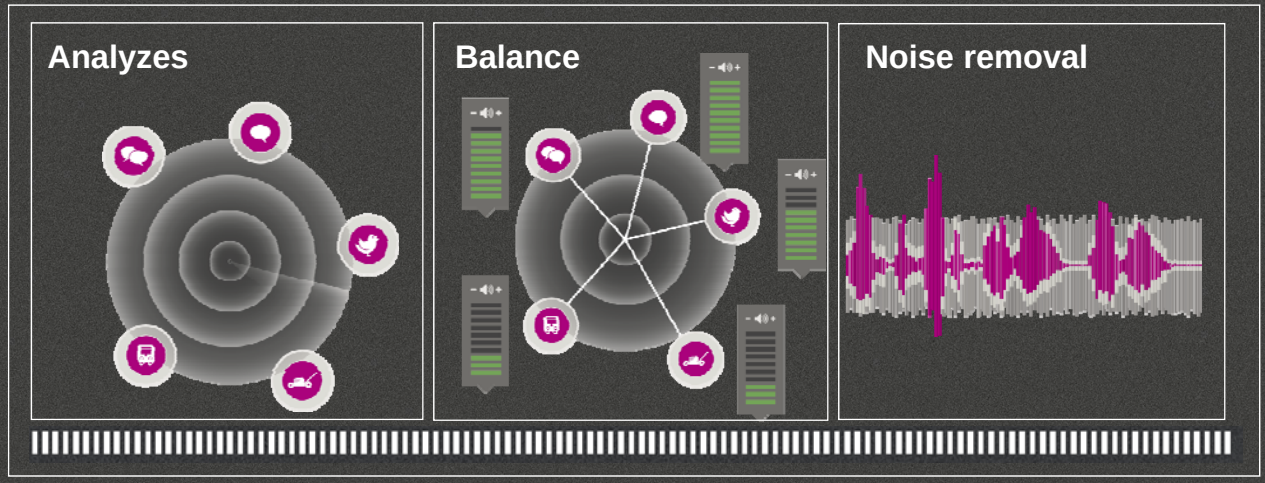

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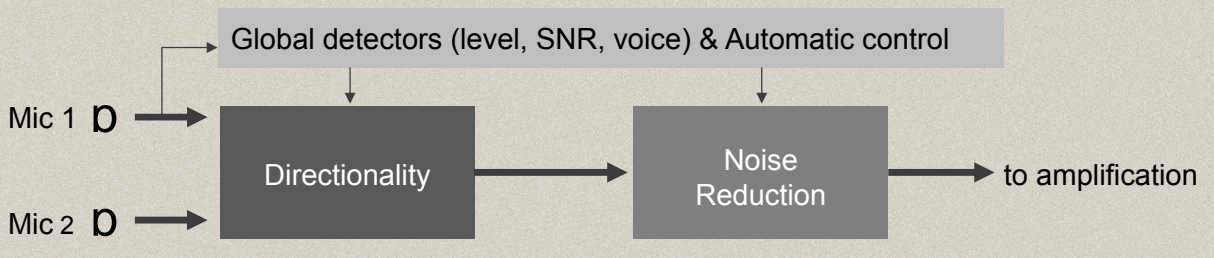
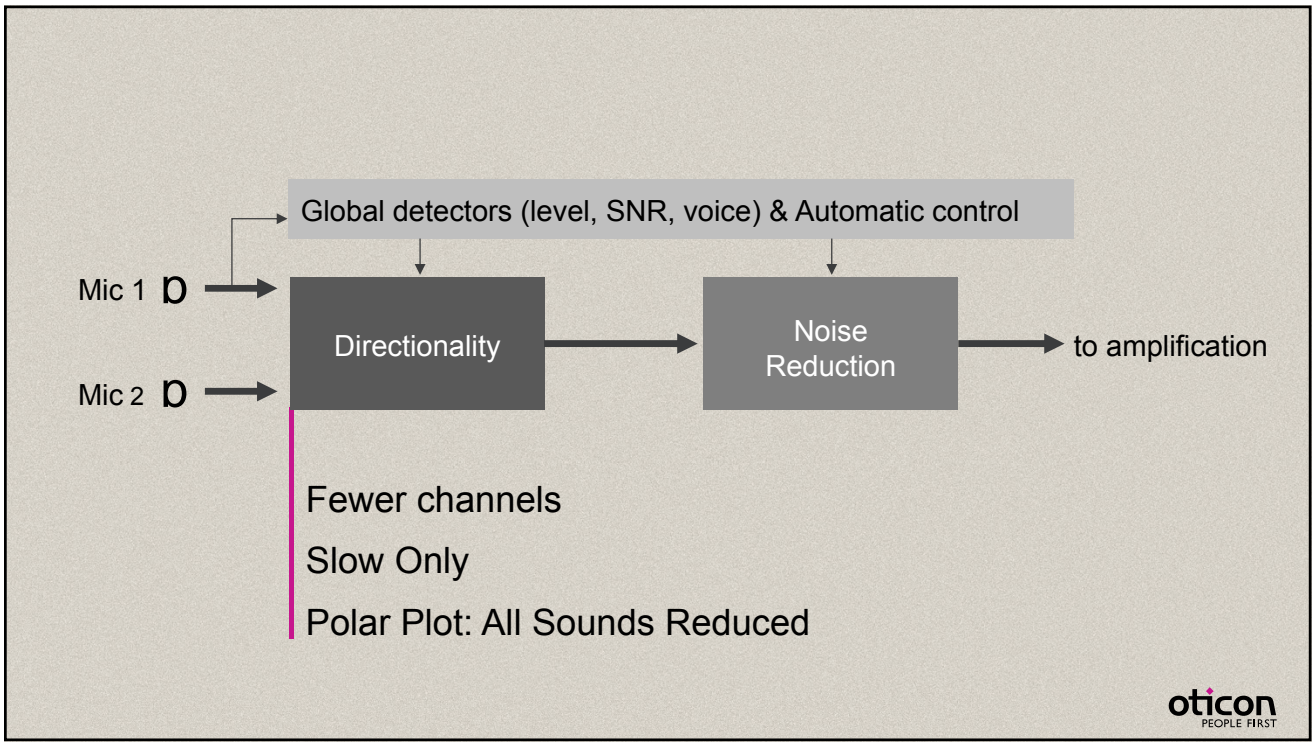
How Does it Work?




Global detectors (level, SNR, voice) & Automatic control
Mic 1
Mic 2
Directionality
Noise Reduction
to amplification
Fewer channels
Slow Only
Polar Plot: All Sounds Reduced
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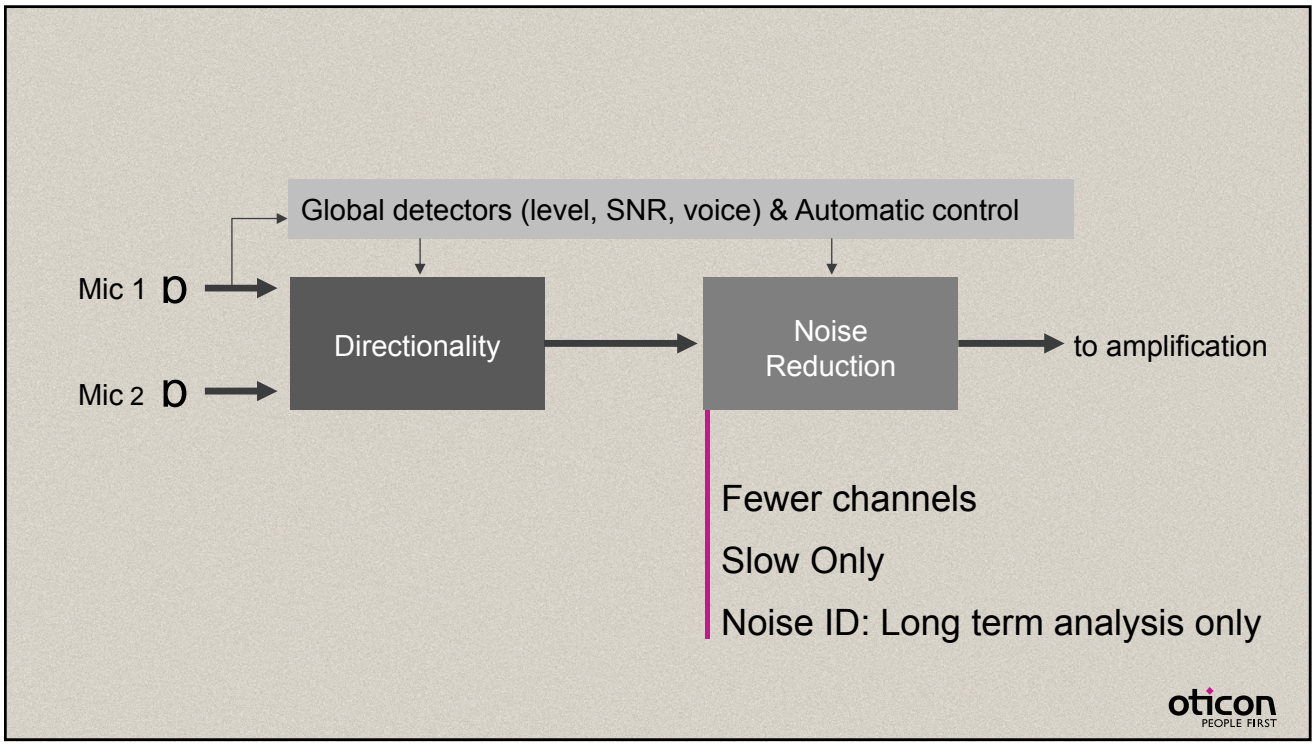
Global detectors (level, SNR, voice) & Automatic control
Mic 1
Mic 2
Directionality
Noise Reduction
to amplification
Fewer channels
Slow Only
Noise ID: Long term analysis only
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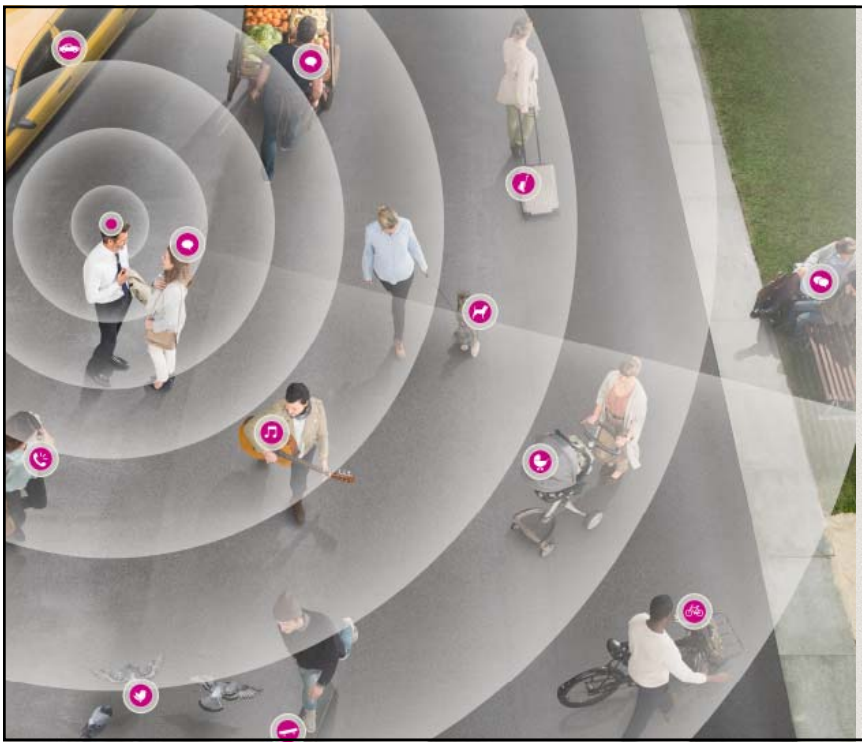
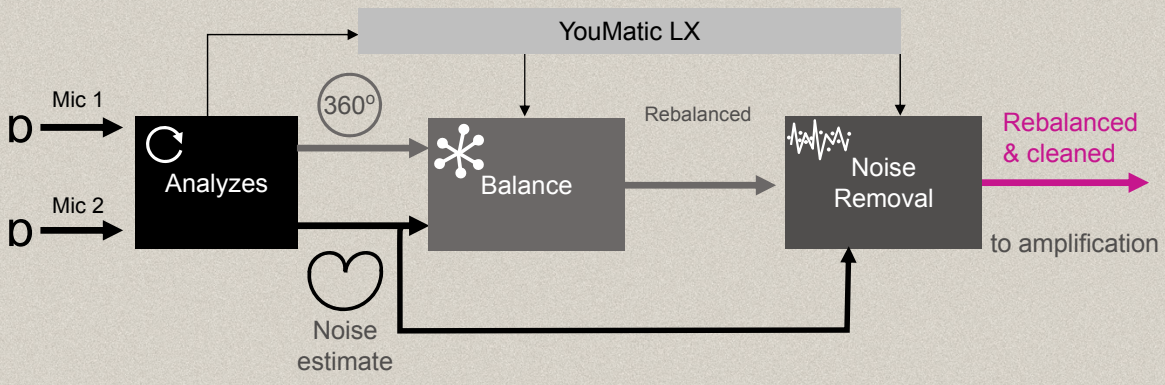


Step 1

- Scans more than 100 times/sec
- What & where

OpenSound Navigator™



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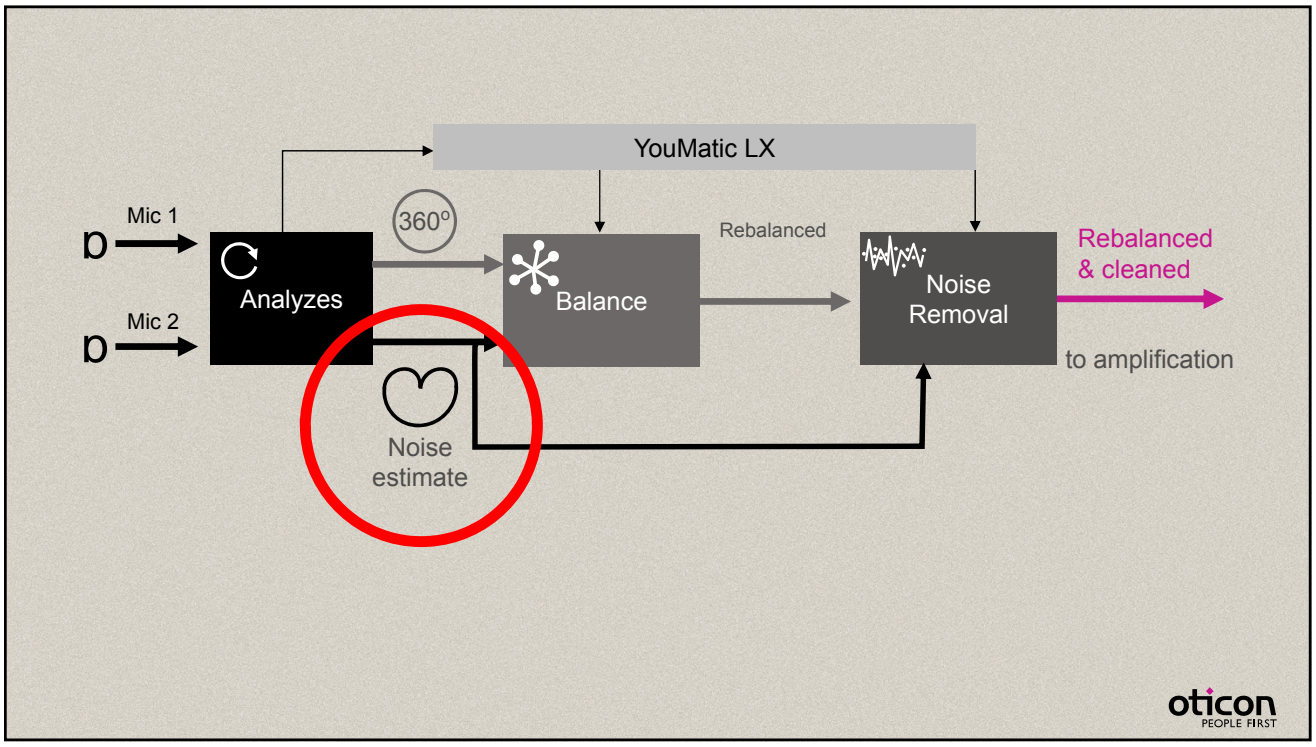
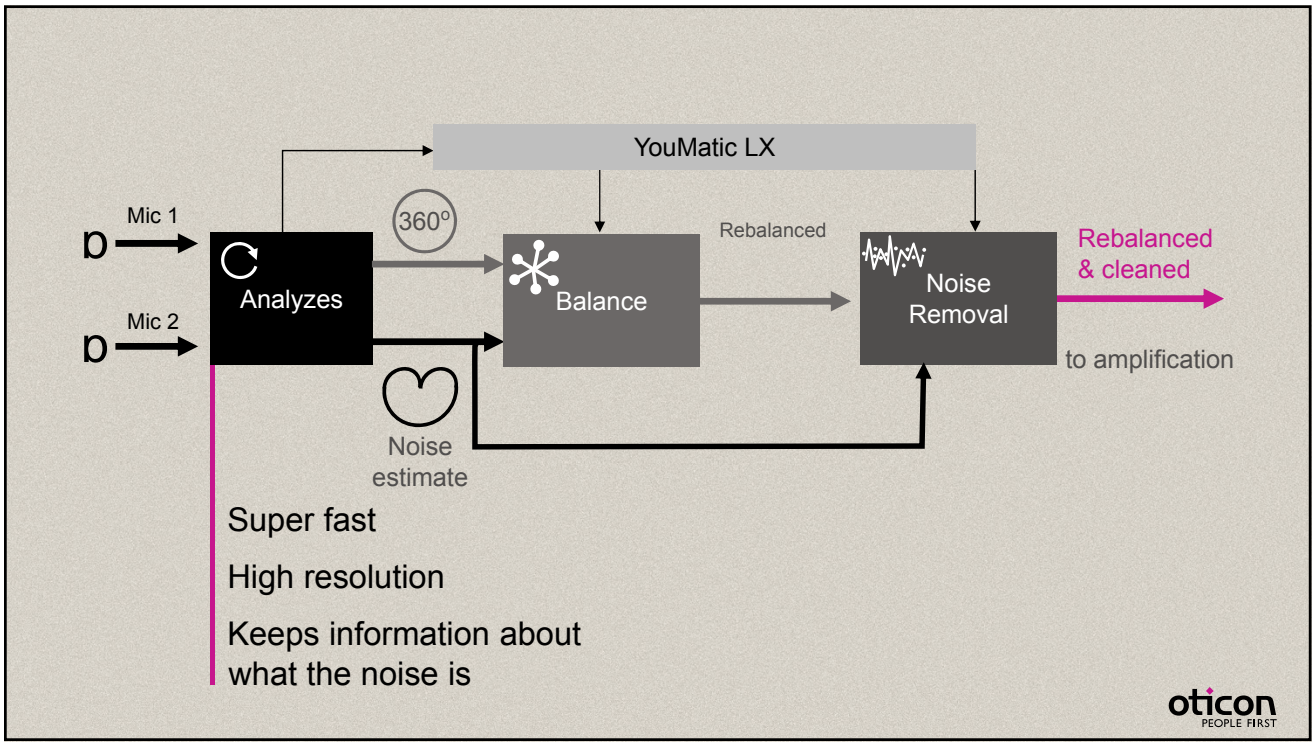

YouMatic LX
Mic 1
Mic 2
360°
Analyzes
Balance
Rebalanced
Noise Removal
Rebalanced & cleaned
to amplification
Noise estimate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360°
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Balance
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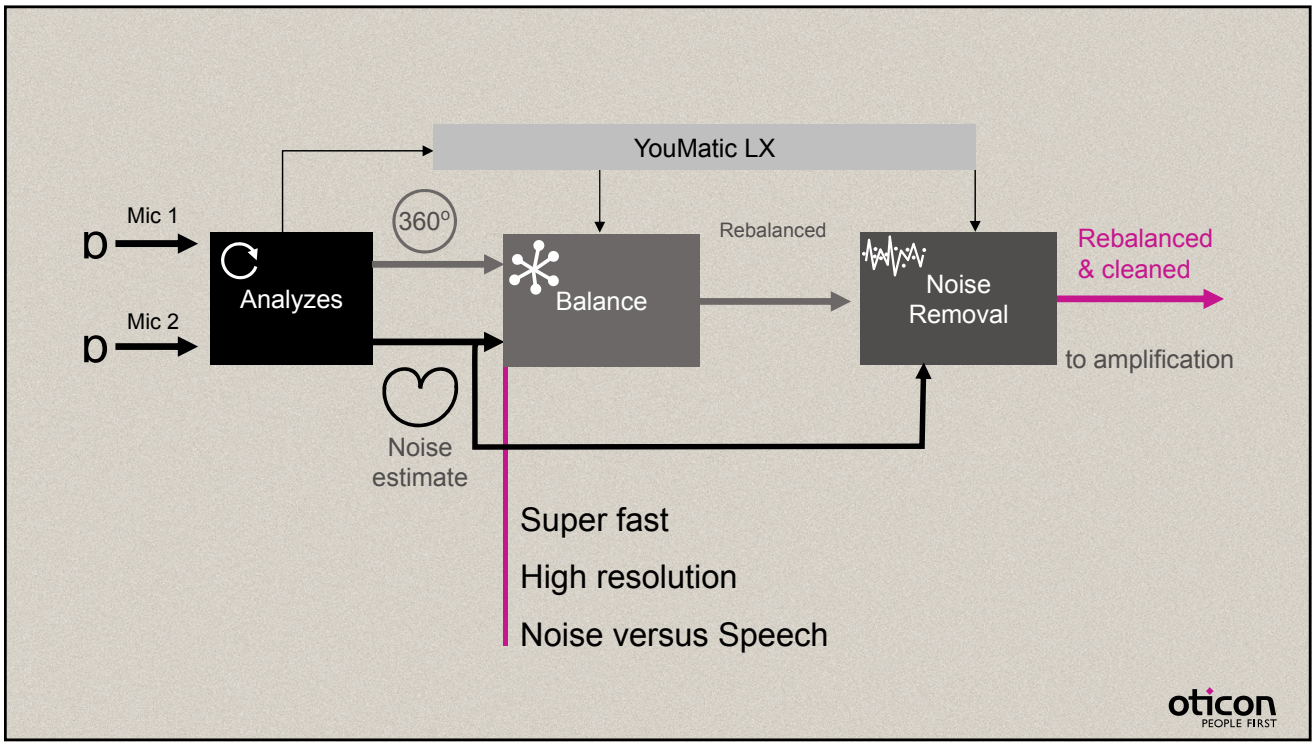
Noise Removal
Rebalanced & cleaned
to amplification
Noise estimate
Super fast
High resolution
Keeps information about what the noise is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Super fast
High resolution
Noise versus Speech
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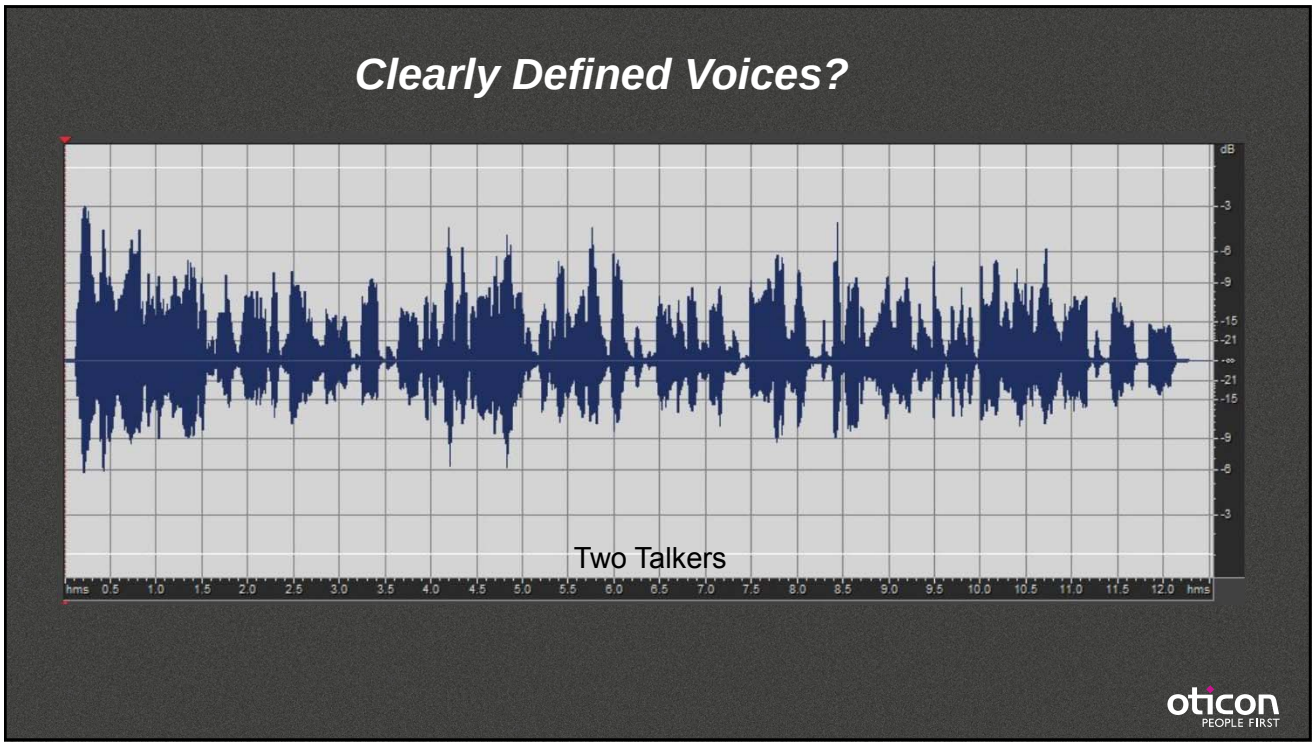
Clearly Defined Voices?
Two Talkers
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Clearly Defined Voices?

Busy Lunch Restaurant

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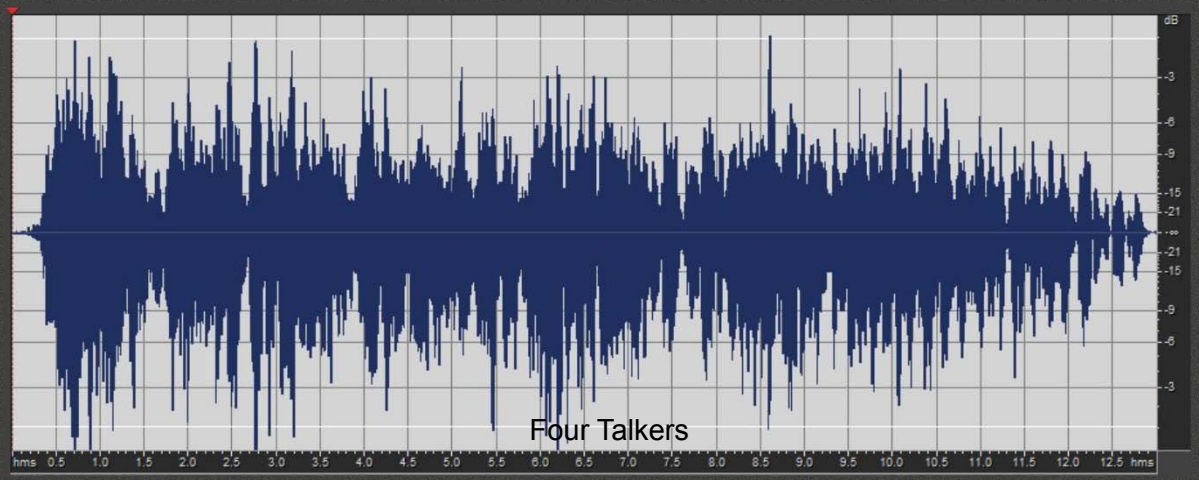
Clearly Defined Voices?



Four Talkers

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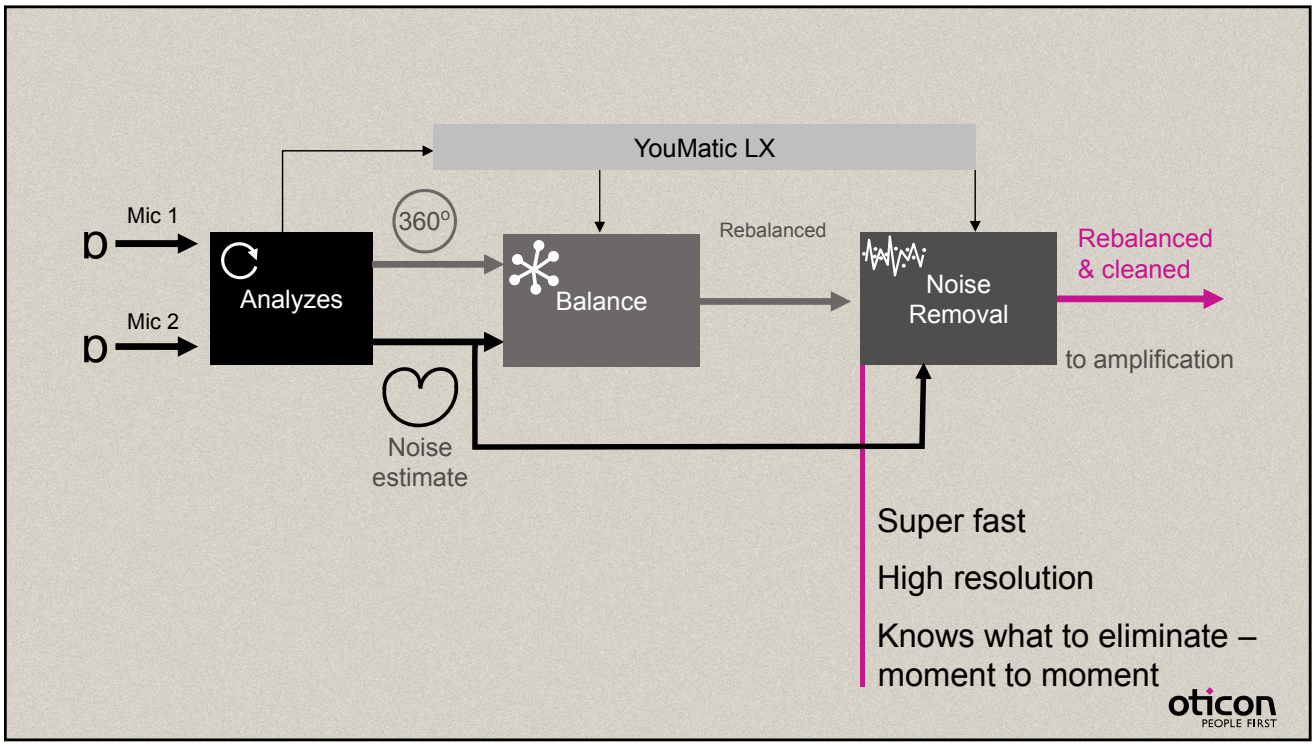
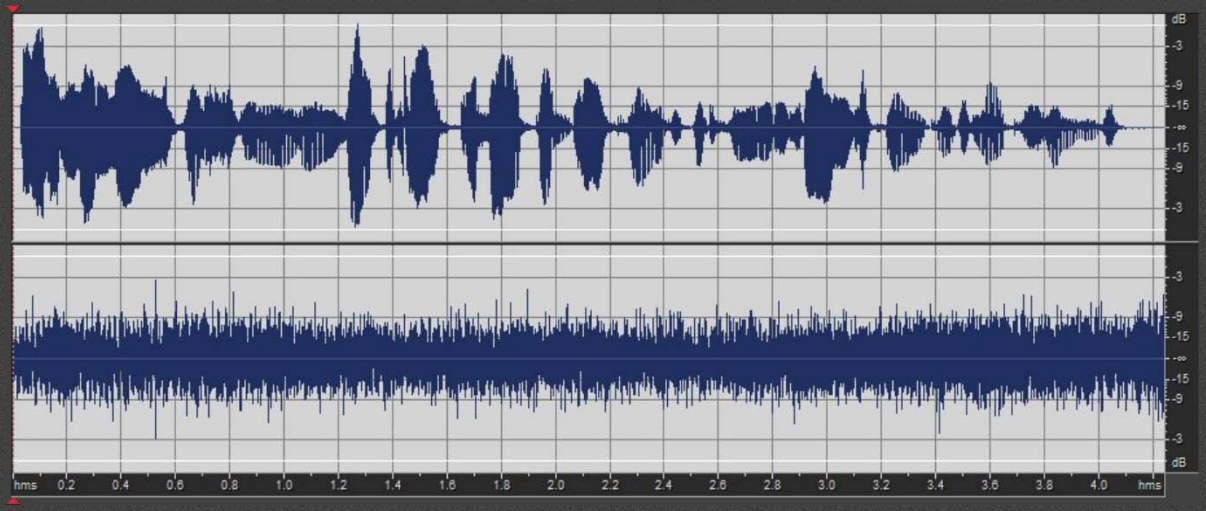


Speech Versus Noise: Long Term Characteristics



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Speech Versus Noise: Long Term Characteristics

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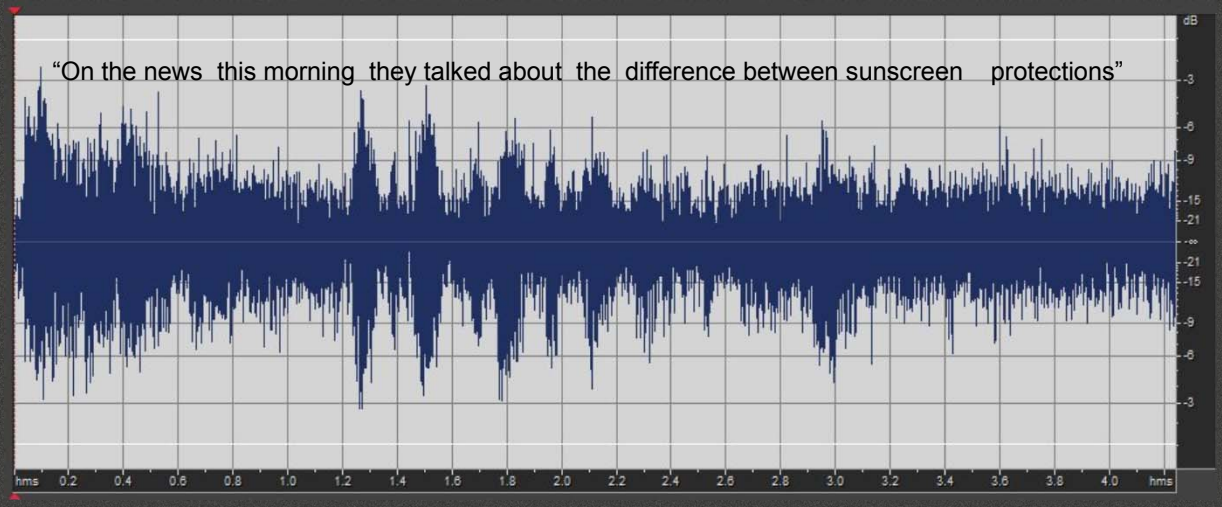
Speech Versus Noise: Short Term Characteristics



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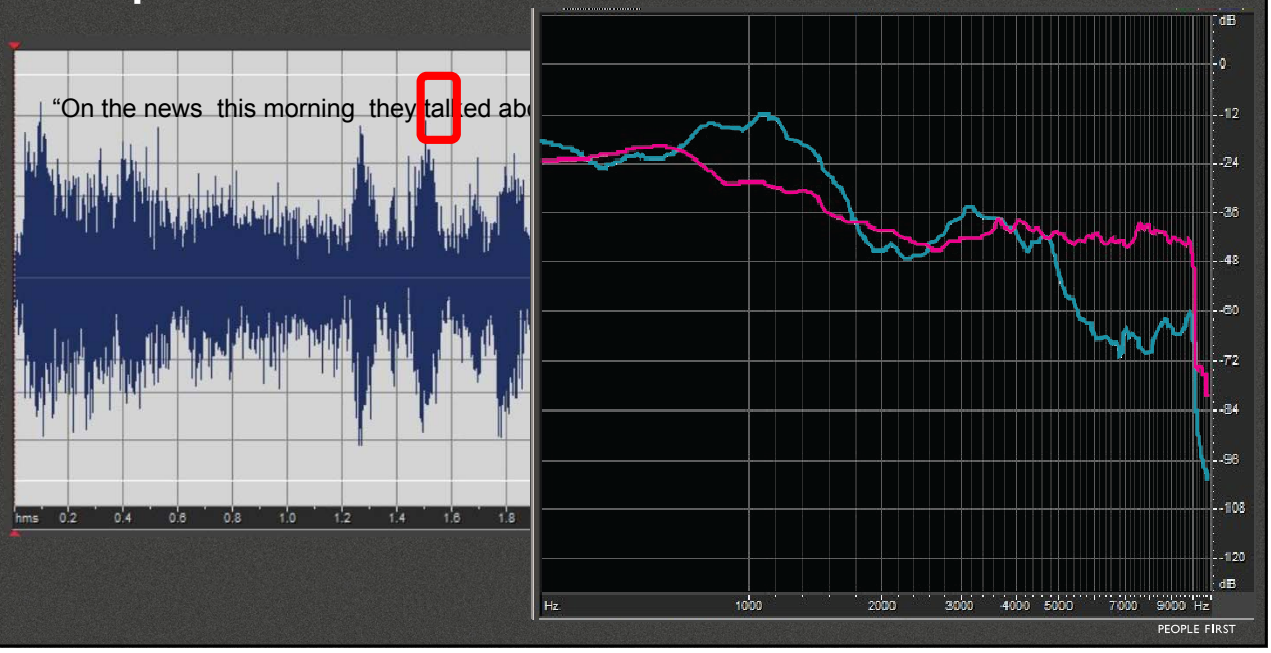

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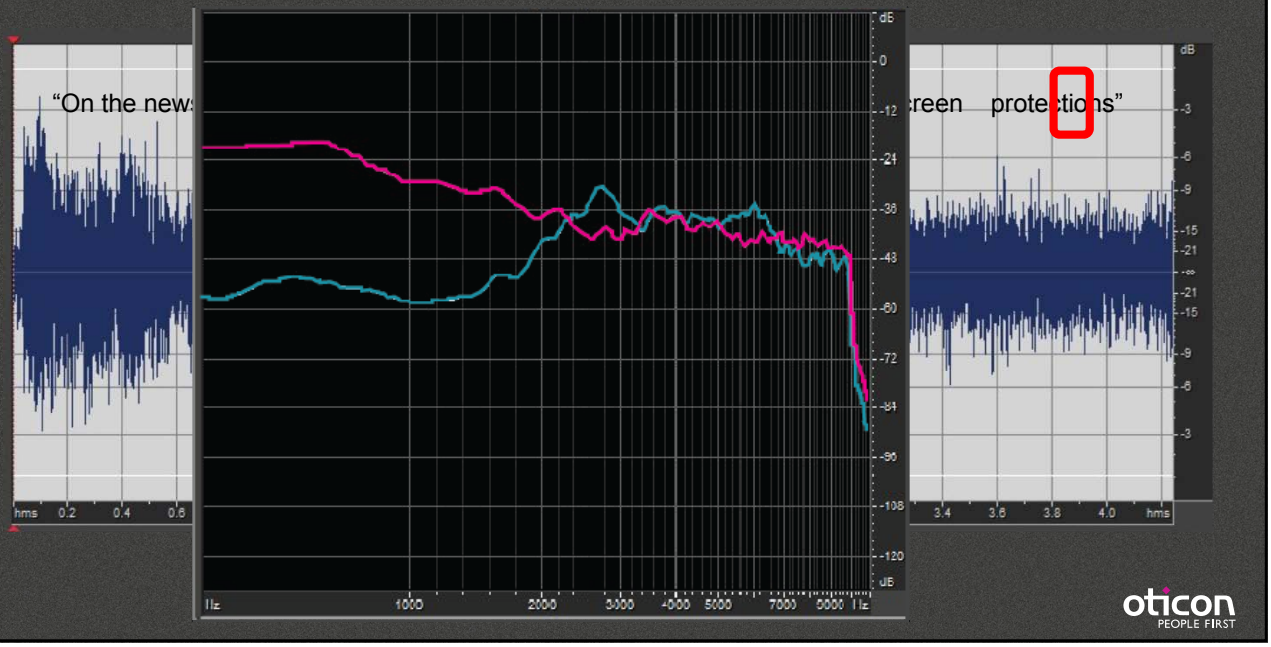

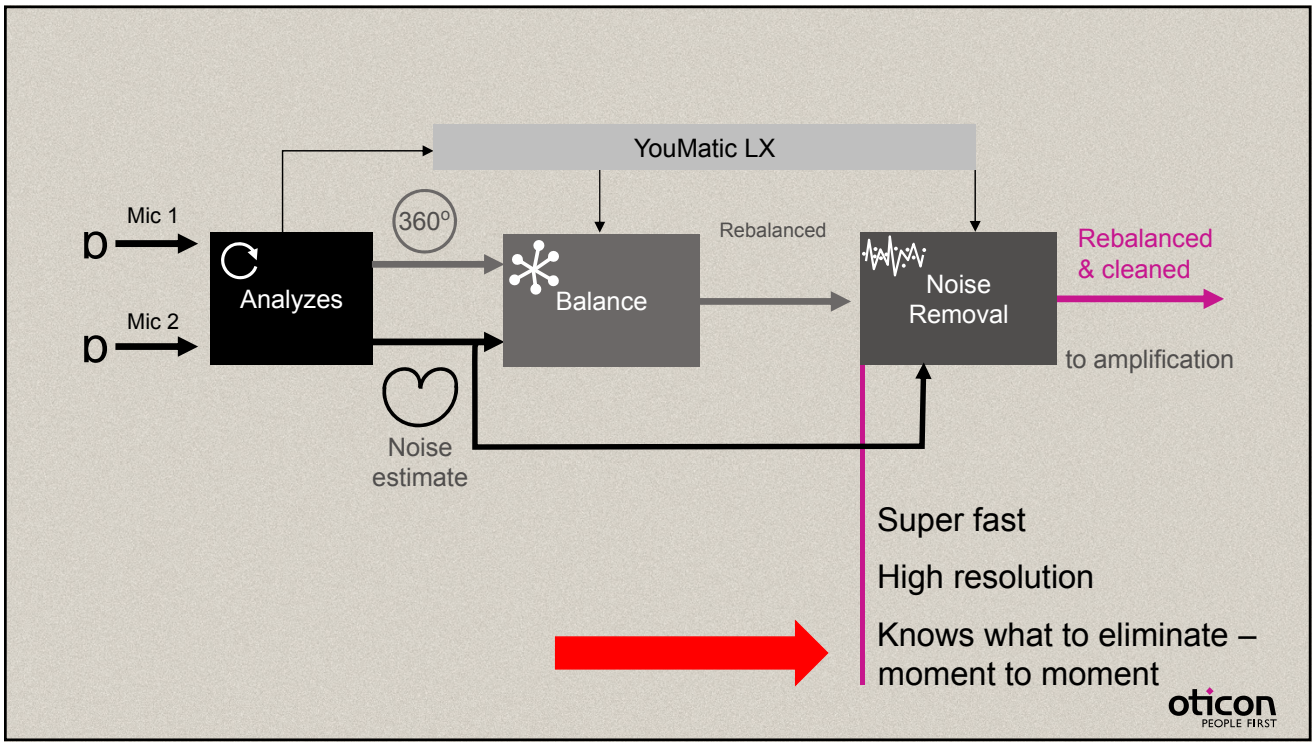
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Noise estimate
Super fast
High resolution
Knows what to eliminate – moment to moment
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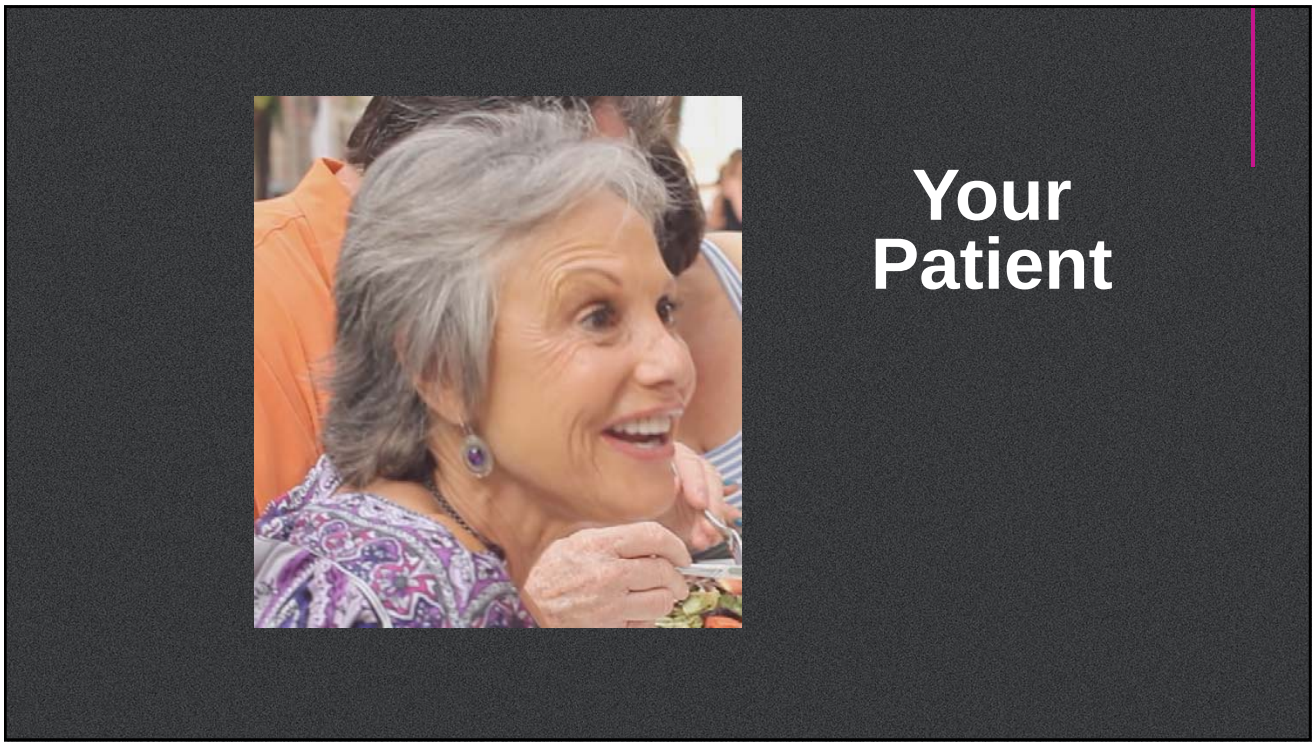
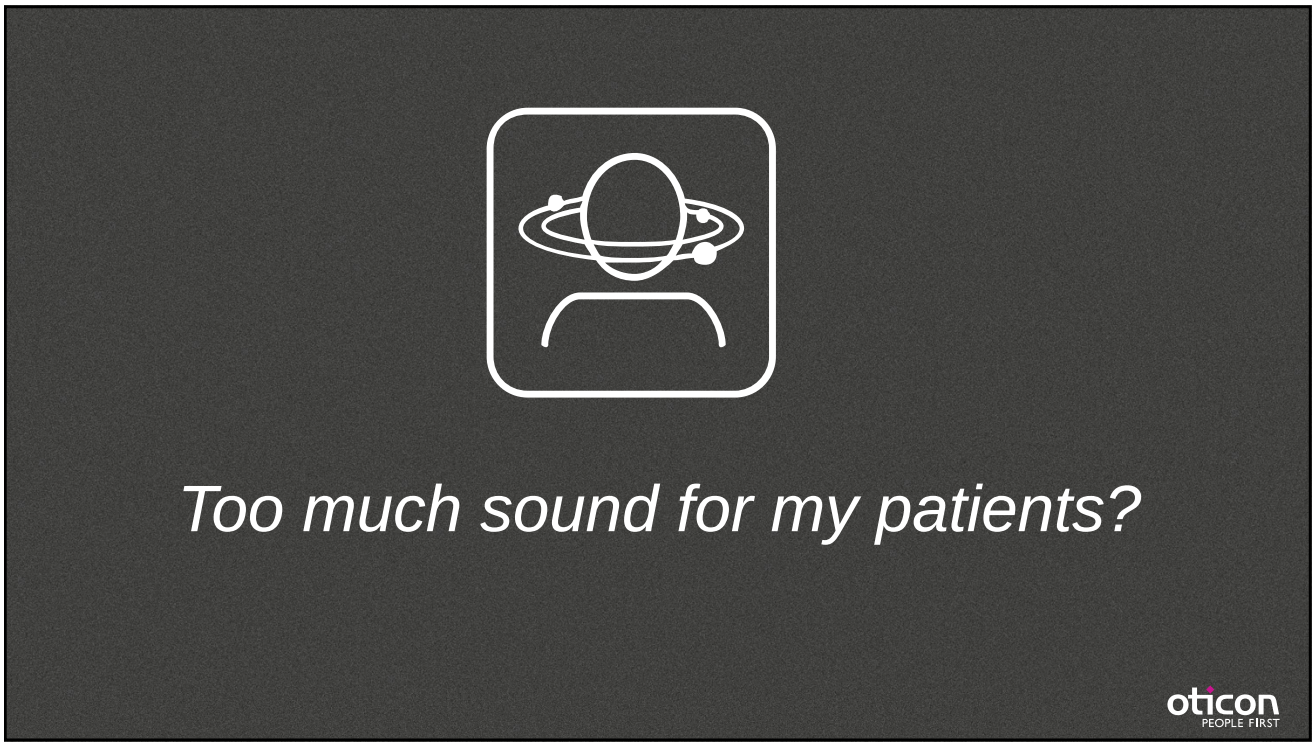

Your Patient


Too much sound for my patients?
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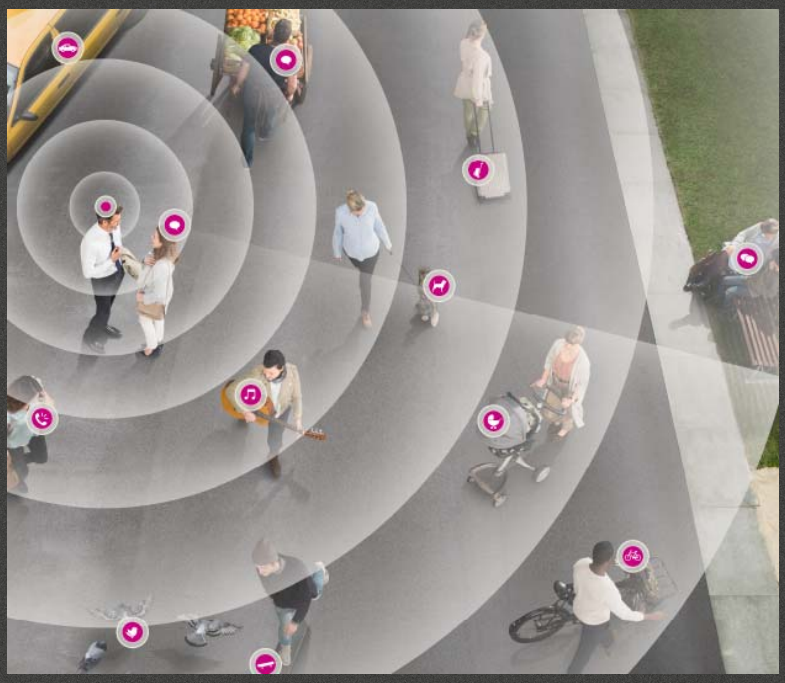
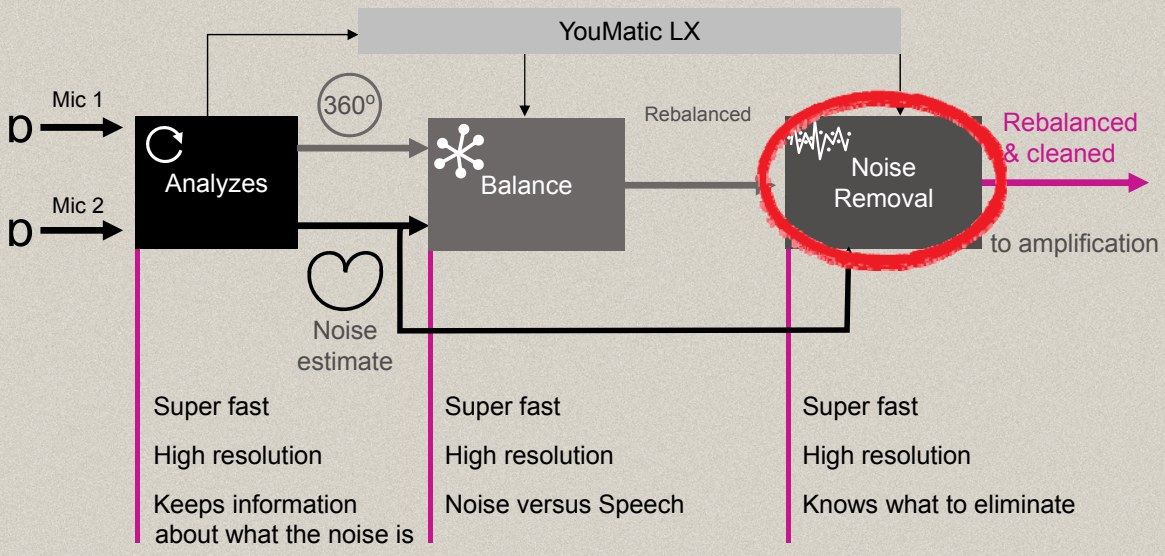
BrainHearing™

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Noise versus Speech
Super fast
High resolution
Knows what to eliminate

Spatial Sound™ LX

Speech Guard LX

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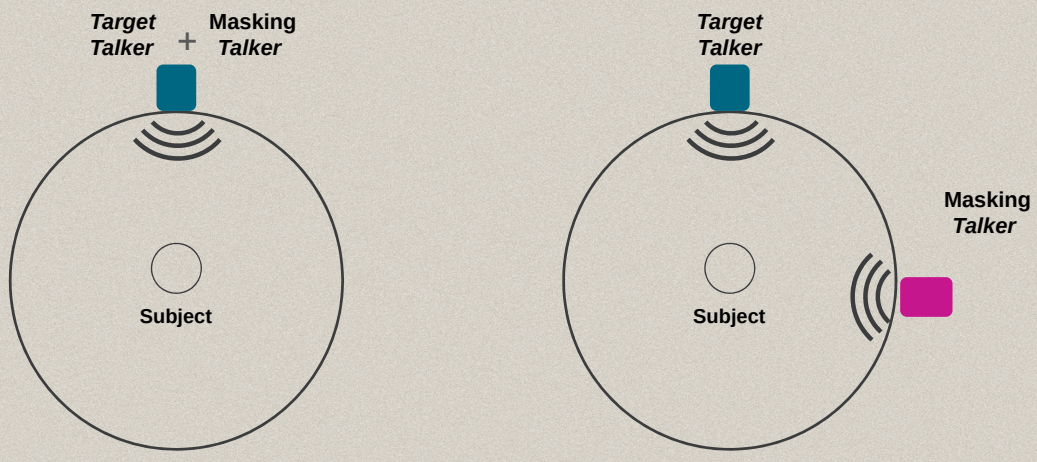
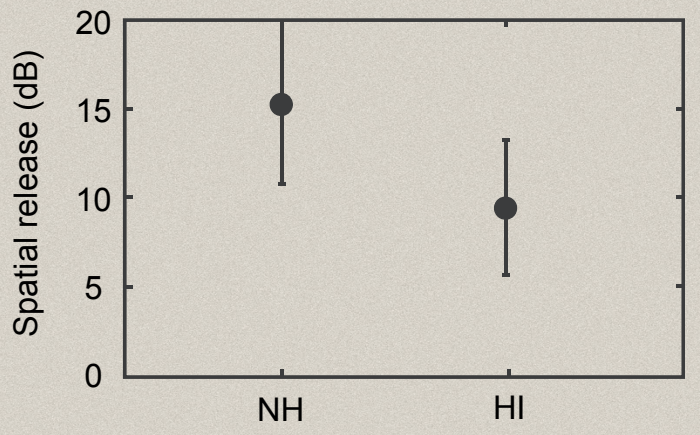
Spatial Sound™ LX
Locate, follow and easily shift focus to the sounds you want to hear

Speech Guard™ LX
Improves speech understanding in noisy environments so you can easily follow and engage in conversations



Arbogast et al., 2005

Benefit of 90 Degree Spatial Separation



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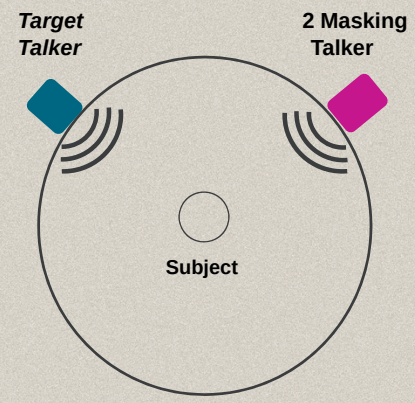
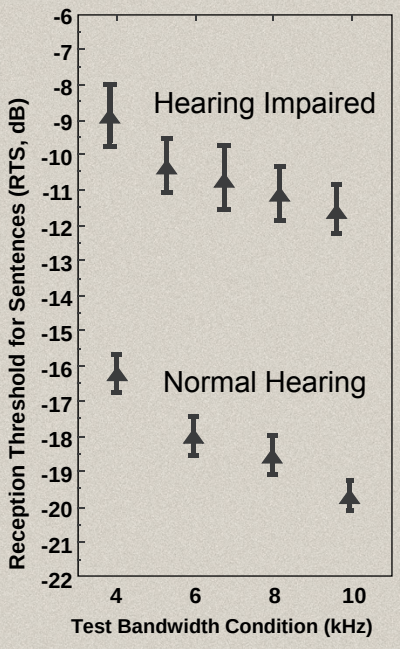


Levy et al., 2015



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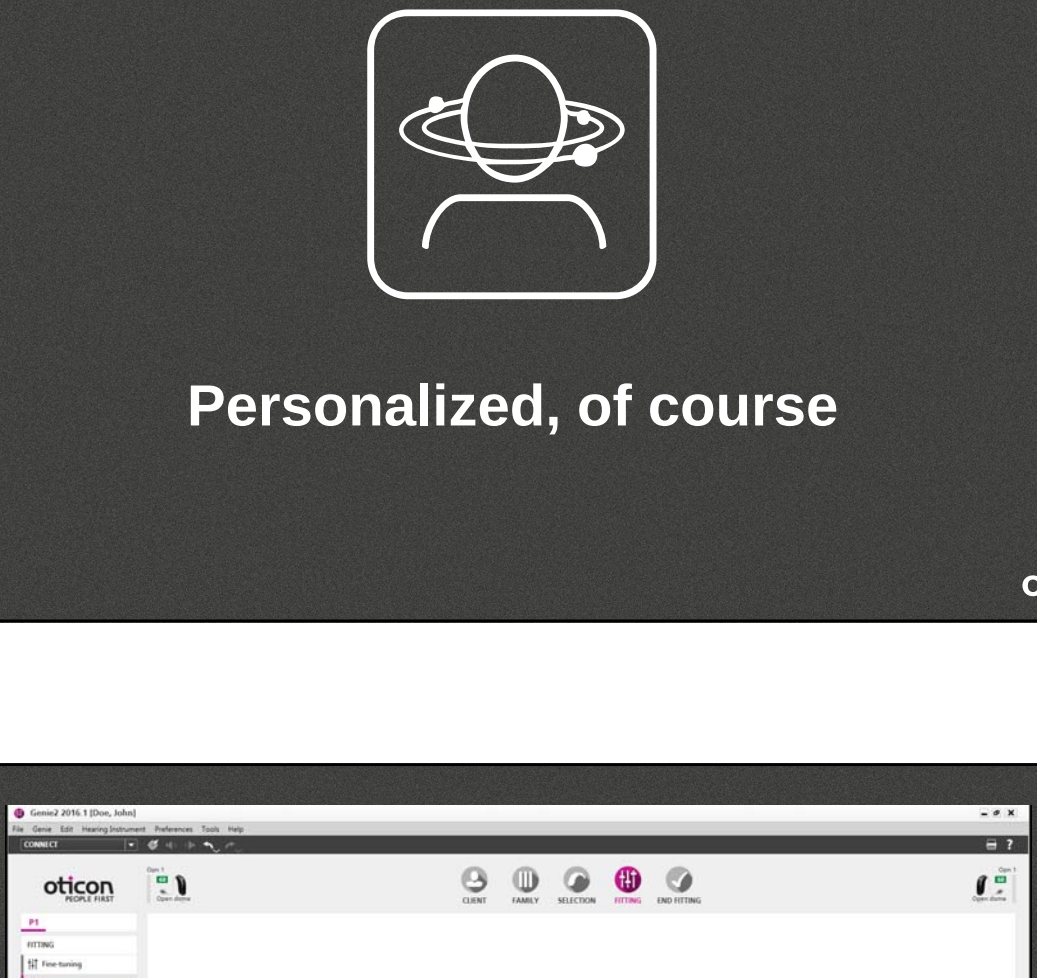
Personalized, of course



OpenSound Navigator™ Compared to . . .

- Traditional Directionality
- Traditional Noise Reduction
- Beamforming

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Open up to the world
O