

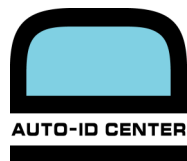


AUTO-ID CALCULATOR

CHRISTIAN TELLKAMP

M-LAB, UNIVERSITY OF ST. GALLEN, SWITZERLAND

NOVEMBER 13, 2002



AGENDA

- Objectives of Auto-ID Calculator
- Auto-ID Calculator progress
- Presentation of web tool
- Next steps



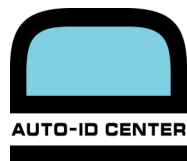
OBJECTIVES OF AUTO-ID CALCULATOR

- To create a user friendly, web-enabled cost benefit tool
- Enable users to see initial impact of applying Auto-ID Technology
- Use today's cost assumptions to determine NPV
- Available on the public section of the website



TEAM

- Joyce Lo, Project Manager
- Christian Tellkamp, M-Lab



AGENDA

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- Auto-ID Calculator progress
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AUTO-ID CALCULATOR PROGRESS

- Initial design completed July 2002
- Data used in design included:
 - Business case data
 - Industry data
 - Cost data validated by current technology vendors
- Conducted interviews in August/September
- Start of programming business logic September 23rd
- 60 percent completed



AGENDA

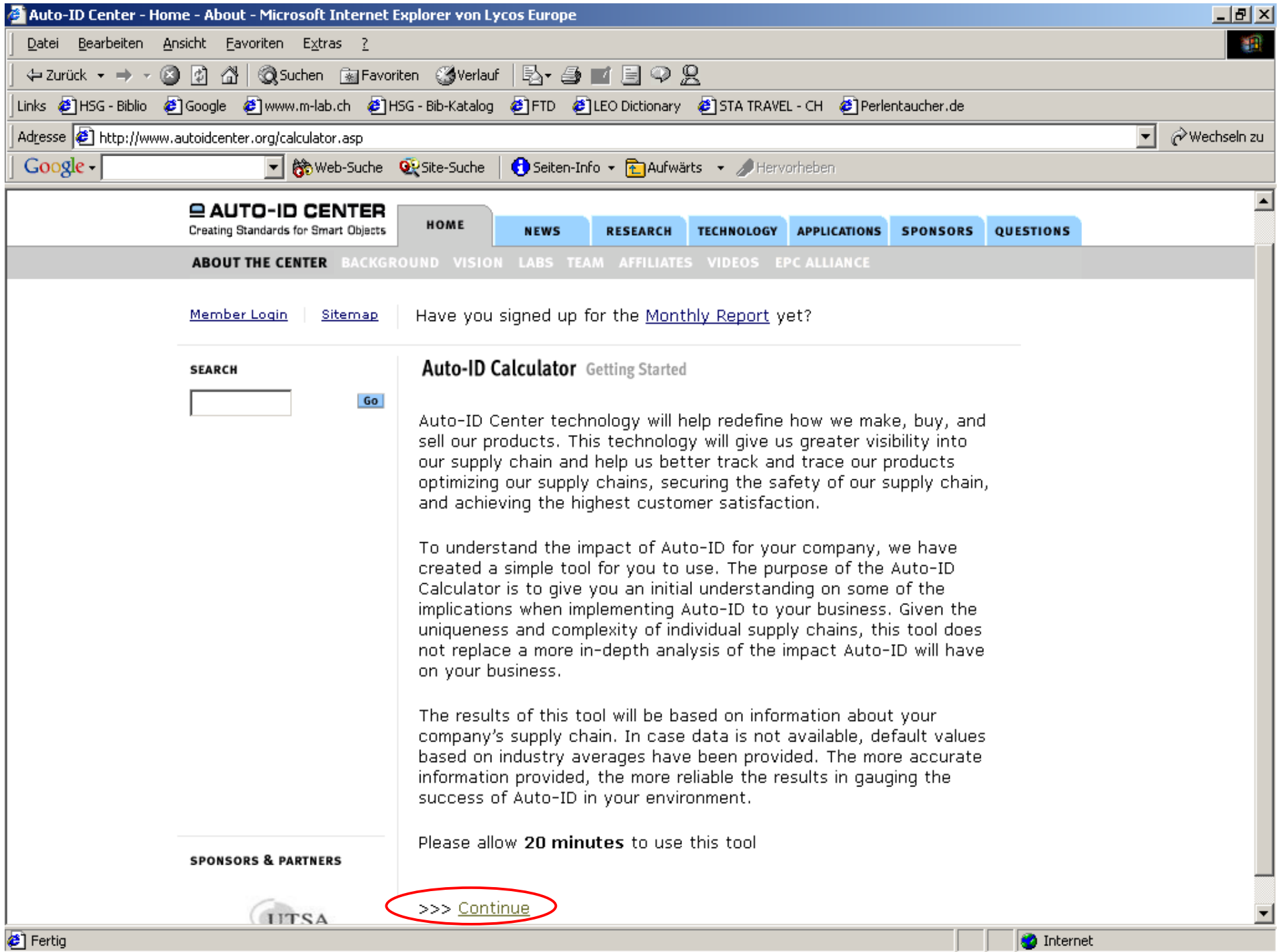
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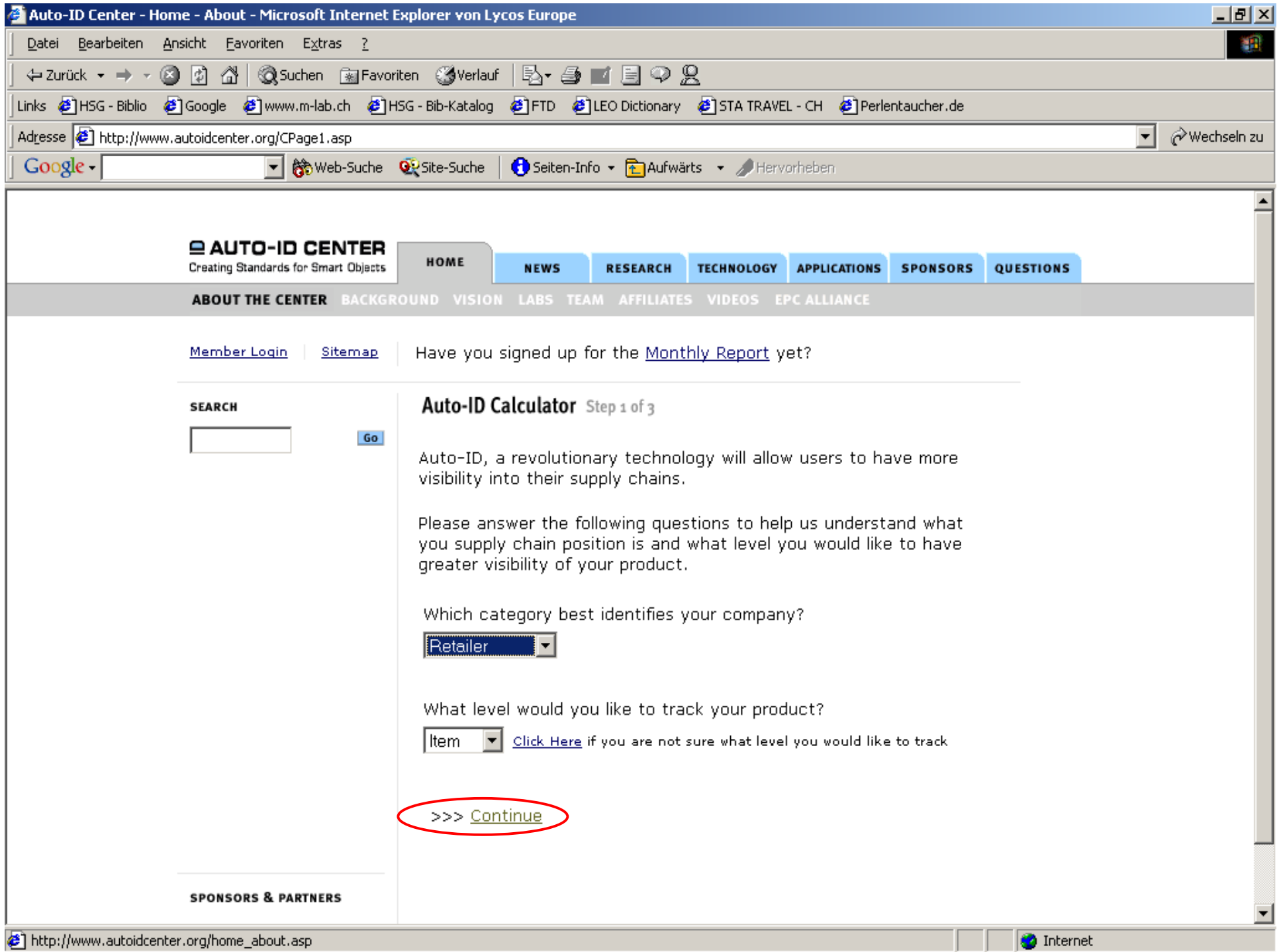


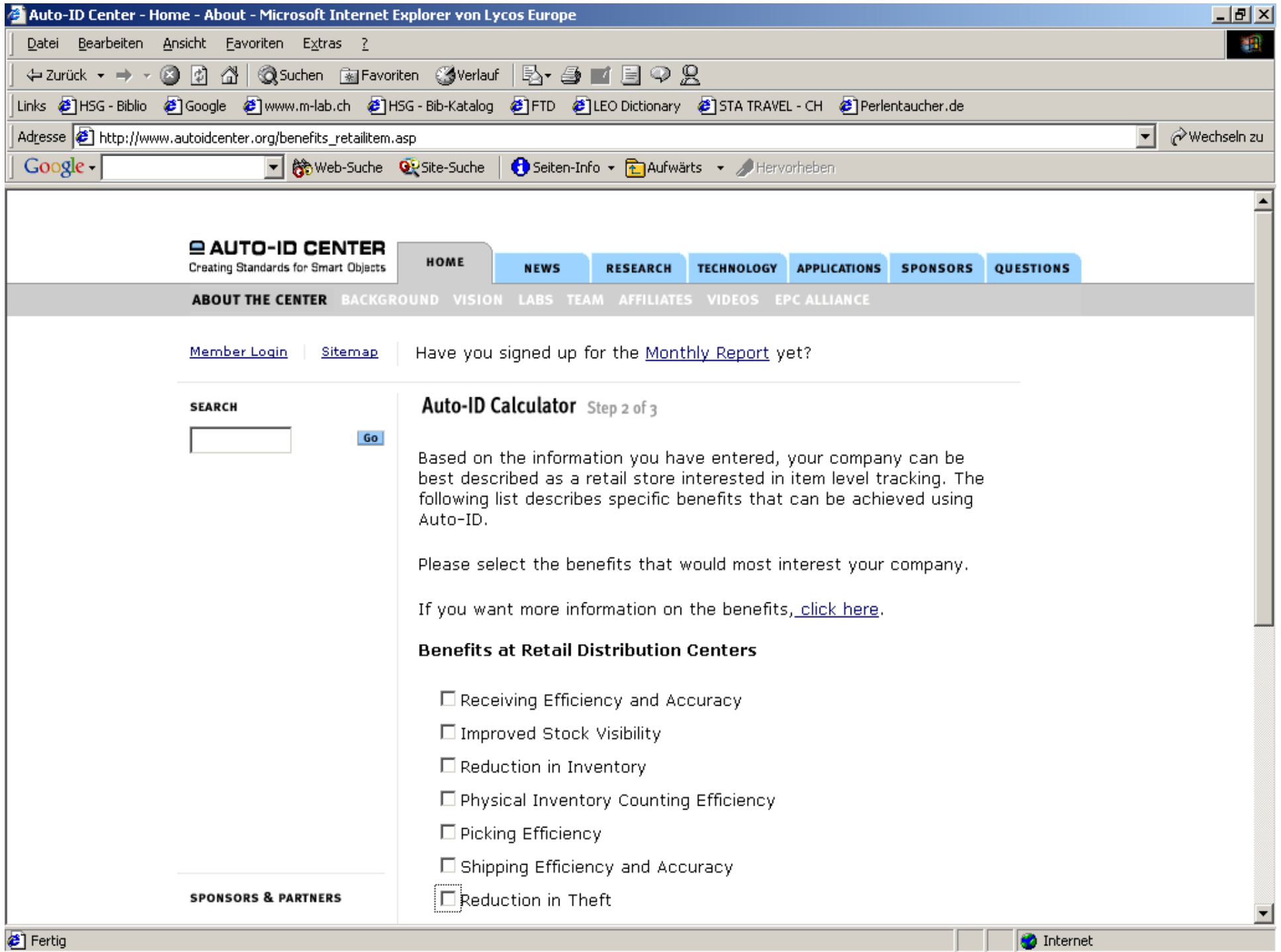
PRESENTATION OF WEB TOOL

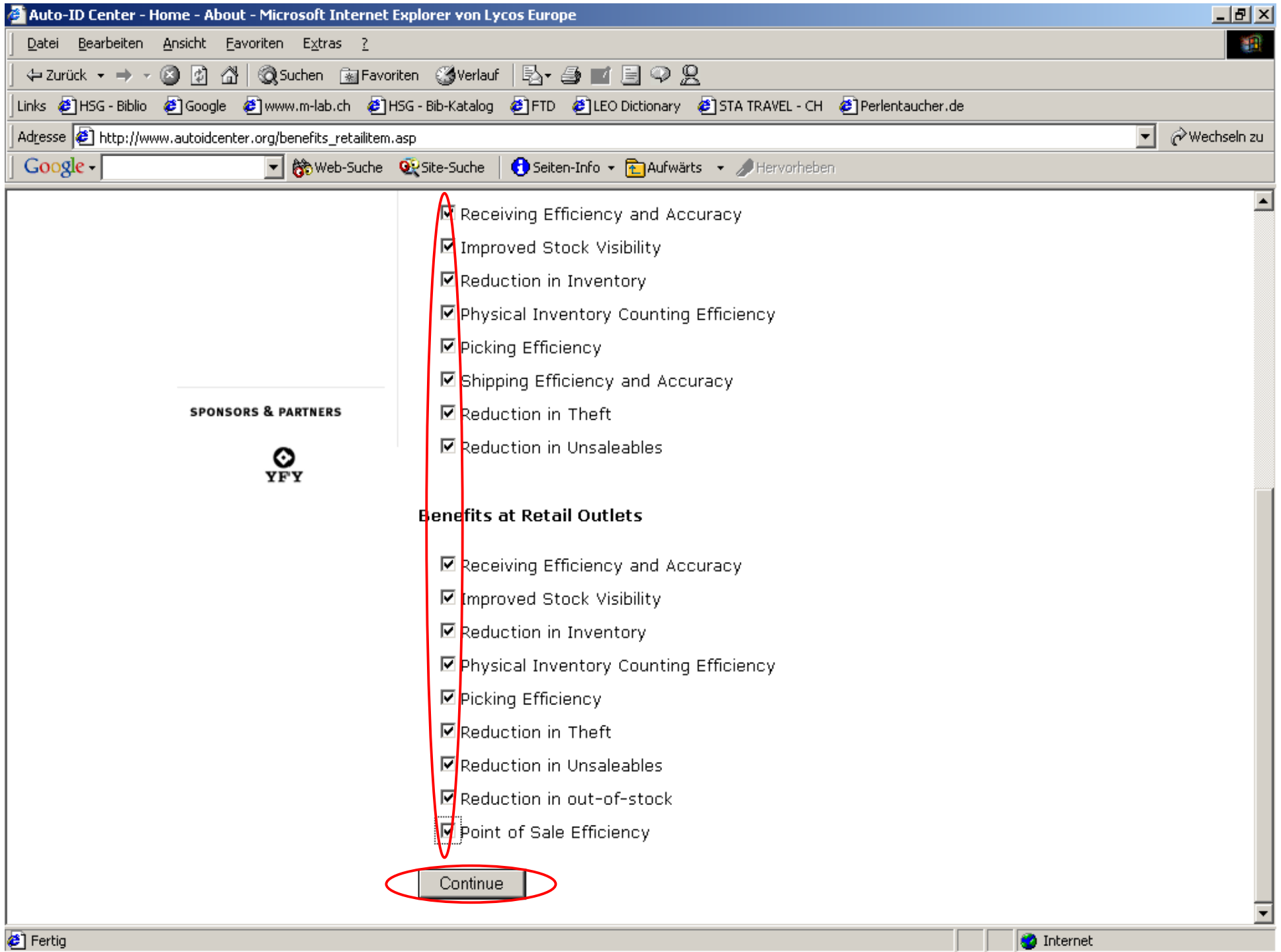
Scenario 1:

User is a *retailer* interested in *item level tracking* and wants to use RFID technology *both in distribution centers and outlets*









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Auto-ID Calculator Step 3 of 3

The following benefits are most important to your company:

- Retrieving Efficiency and Accuracy at Distr. Centers
- Improved Stock Availability at Distr. Centers

Reduction in out-of-stock: ?

Time items are out-of-stock

3.5

(% of time)

Reduction of out-of-stock if actual availability of cases indelivered were known

2.0

(%-points)

Increase in sales due to reduction in out-of-stock

50

Point of sale efficiency: ?

Reduction in time needed for check-out process

15

(seconds per check-out process)

Number of check out processes

2500

(per day per outlet)

Continue

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Auto-ID Calculator Results

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$77.2** million USD
Amortisation time: **3.8** years

Potential Saving Per Year

	<i>Benefits at distribution centers</i>	<i>Savings per item</i>
Receiving Efficiency and Accuracy:	\$5.0 mil USD	\$0.002 USD
Improved Stock Visibility:	\$1.2 mil USD	\$0.001 USD
Reduction in Inventory:	\$4.4 mil USD	\$0.002 USD
Physical Inventory Counting Efficiency:	\$0.4 mil USD	\$0.000 USD
Picking Efficiency:	\$1.2 mil USD	\$0.001 USD
Shipping Efficiency and Accuracy:	\$2.2 mil USD	\$0.001 USD
Reduction in Theft:	\$4.1 mil USD	\$0.002 USD
Reduction in Unsaleables:	\$3.4 mil USD	\$0.002 USD

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Tot savings at distr. centers:	\$21.7 mil USD	\$0.010 USD
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<i>Benefits at outlets</i>		<i>Savings per item</i>
Receiving Efficiency:	\$10.1 mil USD	\$0.005 USD
Improved Stock Visibility:	\$5.8 mil USD	\$0.003 USD
Reduction in Inventory:	\$5.1 mil USD	\$0.002 USD
Physical Inventory Counting Efficiency:	\$0.5 mil USD	\$0.000 USD
Picking Efficiency:	\$1.4 mil USD	\$0.001 USD
Reduction in Theft:	\$5.1 mil USD	\$0.002 USD
Reduction in Unsaleables:	\$3.0 mil USD	\$0.001 USD
Reduction in out-of-stock:	\$4.2 mil USD	\$0.002 USD
Point of sale efficiency:	\$7.5 mil USD	\$0.003 USD

Tot savings at Outlets:	\$42.6 mil USD	\$0.020 USD
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Estimated Costs

Annual costs:	\$10.0 mil USD	Per Item: \$0.005 USD
Cost of Tags:	\$0.0 mil USD	Per Item: \$0.000 USD
One time costs:	\$99.5 mil USD	
Software Integration Cost:	\$8.6 mil USD	
Reader Cost (incl. Installation):	\$90.9 mil USD	

If you want to test the sensitivity of your result you may modify the following inputs:

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If you want to test the sensitivity of your result you may modify the following inputs:

Software Integration Cost: USD

Cost of Capital: %

Currently, it is assumed that the tag cost is absorbed during manufacturing. However, to view the potential impact if the tag cost is shared amongst your trading partners or in cases where reusable tags are used:

Sharing of RFID tag costs with supply chain partners: %

Reuse of RFID tags: %

You may consider to start with a subset of your product range (e.g. high value, high margin products) and expand the use of RFID tags over time:

Initial set of products: (% of sales)

Average price of initial products: USD

Margin on initial products: (% of sales)

Growth: (% of year)

The results give an initial estimate of what the potential cost and benefits of implementing Auto-ID technology may be. Individual benefits may vary by company.

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Auto-ID Calculator

Results

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: \$71.8 million USD

Amortisation time: 3.9 years

Currently, it is assumed that the tag cost is absorbed during manufacturing. However, to view the potential impact if the tag cost is shared amongst your trading partners or in cases where reusable tags are used:

Sharing of RFID tag costs with supply chain partners:0%

Reuse of RFID tags:0%

You may consider to start with a subset of your product range (e.g. high value, high margin products) and expand the use of RFID tags over time:

Initial set of products:100(% of sales)

Average price of initial products:1.75USD

Margin on initial products:11(% of sales)

Growth:0(% of year)

Re-Calculate

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Auto-ID Calculator

Results

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value:

\$-120.4 million USD

Amortisation time:

0.0 years

It may not be attractive for you to implement Auto-ID at this time in the areas you have selected, however, there may be other opportunities not outlined in this calculator that may warrant further consideration. Also, The cost of technology will decrease over time that may make Auto-ID more attractive at a later time.

Potential Saving Per Year

Benefits at distribution centers		Savings per item
Receiving Efficiency and Accuracy:	\$5.0 mil USD	\$0.002 USD
Improved Stock Visibility:	\$1.2 mil USD	\$0.001 USD
Reduction in Inventory:	\$5.3 mil USD	\$0.002 USD

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Auto-ID Calculator Step 3 of 3

The following benefits are most important to your company:

- Retrieving Efficiency and Accuracy at Distr. Centers
- Improved Stock Visibility at Distr. Centers

Average value of item

Currency

Number of retail outlets

Average margin (% of sales)

Average size of outlet

Inventory in backroom (% of sales)

Yearly sales

Implementation start year

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Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$117.2** million USD
Amortisation time: **3.0** years

If you want to test the sensitivity of your result you may modify the following inputs:

Software Integration Cost: USD
Cost of Capital: %

Currently, it is assumed that the tag cost is absorbed during manufacturing. However, to view the potential impact if the tag cost is shared amongst your trading partners or in cases where reusable tags are used:

Sharing of RFID tag costs with supply chain partners: %
Reuse of RFID tags: %

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Auto-ID Calculator Results

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$13.4** million USD
Amortisation time: **5.3** years

Potential Saving Per Year

	<i>Benefits at distribution centers</i>	<i>Savings per item</i>
Receiving Efficiency and Accuracy:	\$5.0 mil USD	\$0.002 USD
Improved Stock Visibility:	\$1.2 mil USD	\$0.001 USD
Reduction in Inventory:	\$5.3 mil USD	\$0.002 USD
Physical Inventory Counting Efficiency:	\$0.4 mil USD	\$0.000 USD
Picking Efficiency:	\$1.2 mil USD	\$0.001 USD
Shipping Efficiency and Accuracy:	\$2.2 mil USD	\$0.001 USD
Reduction in Theft:	\$4.1 mil USD	\$0.002 USD

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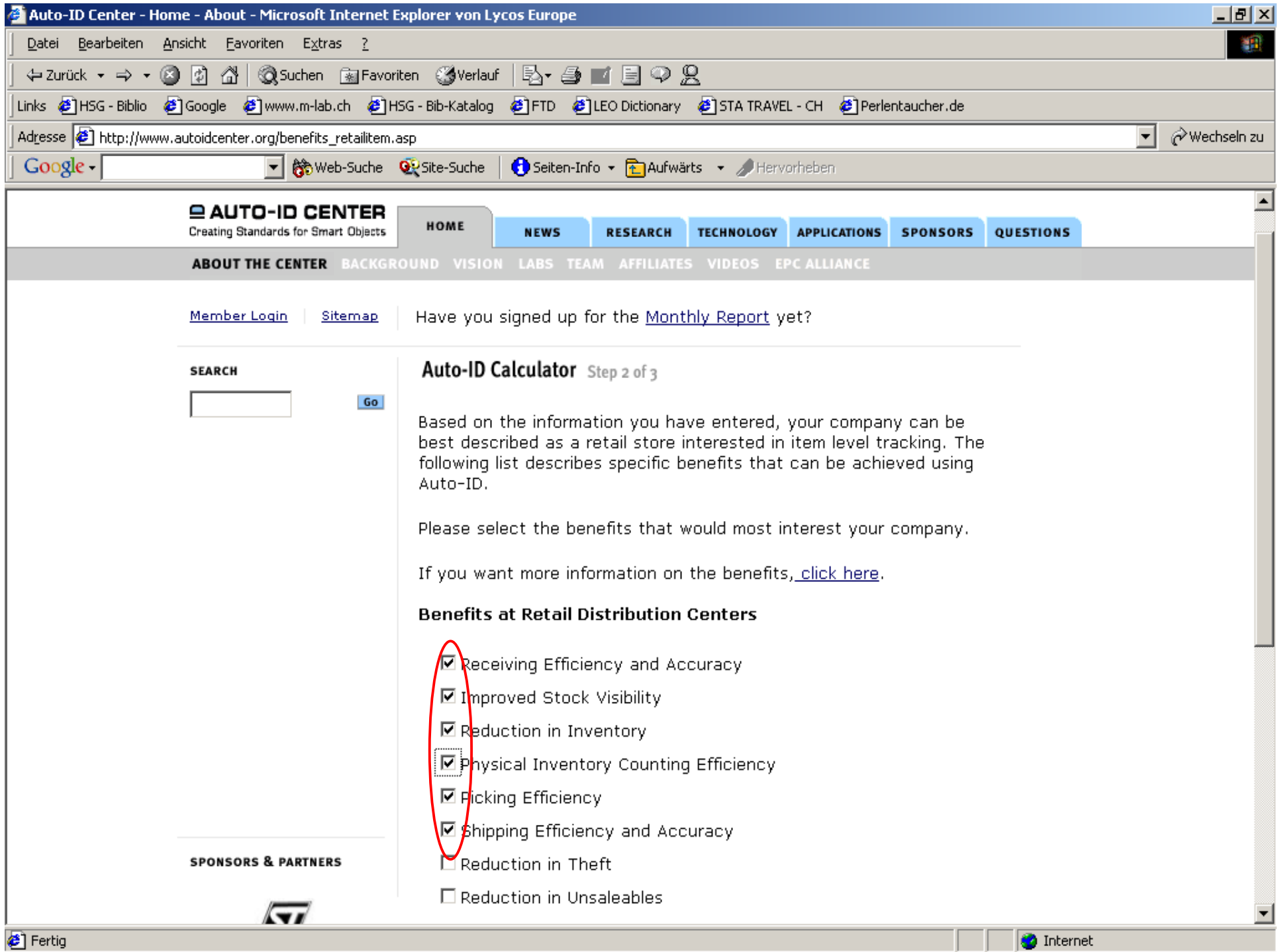
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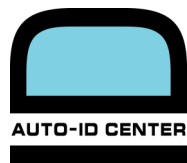
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Scenario 2:

User is a ***retailer*** interested in ***item level tracking*** and wants to use RFID technology ***in distribution centers only to improve internal operations***





AGENDA

- Objectives of Auto-ID Calculator
- Auto-ID Calculator progress
- Presentation of web tool
- Next steps



NEXT STEPS

- Calculation of business logic done by end of November
- User testing in early-December
- Incorporation of feedback and final testing in December
- Finalize in December
- Planned launch January 6th, 2002 – Media outreach by Fleishman-Hillard