

## Fieldbus End User Adoption Trends Show Growing Acceptance

### Keywords

Foundation Fieldbus, PROFIBus, Plant Asset Management, Process Automation

### Summary

Process fieldbus in the form of Foundation Fieldbus H1 and HSE and PROFIBus PA and DP have all moved into the mainstream of process automation and are being installed in large plants for critical applications.

For many users fieldbus compatibility is becoming a key criterion for control system selection. ARC asked users, system integrators, and OEMs about the types of fieldbus protocols they are deploying, the kinds of applications where fieldbus is being used, and the perceived value and estimated payback of fieldbus technology.

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### Analysis

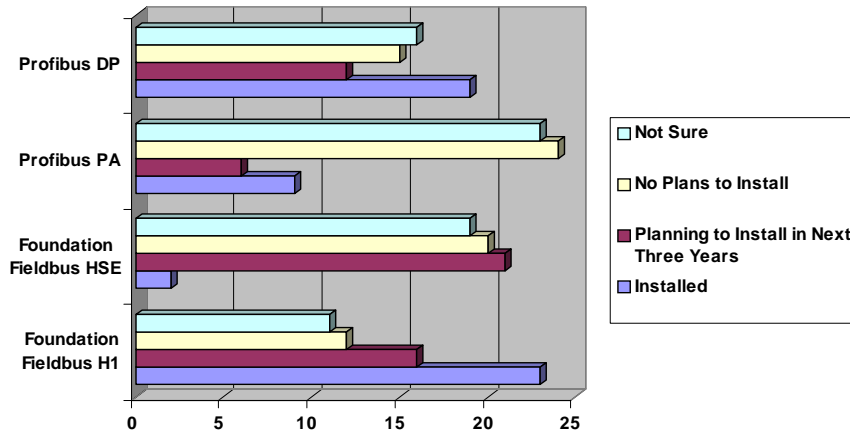
The process fieldbus market has narrowed down to the 2 primary choices of Foundation Fieldbus H1/HSE and PROFIBus DP/PROFIBus PA. ARC believes that users are in the process of adopting fieldbus-compatible devices and systems for critical applications across the entire range of process industries, including traditional heavy process industries such as refining, petrochemical, chemical, oil & gas, and power generation.

Over 60 end users, OEMs, and system integrators responded to the survey, with all of the major process industries represented. The results reported in this Insight have been filtered to include user, OEM, and system integrator responses and exclude all supplier responses. Responses were received from all over the world, but 50 percent of respondents were located in North America.



### Foundation Fieldbus Leads Process Industries in Adoption

According to the majority of users who responded to our survey, Foundation Fieldbus H1 leads the way both in terms of process fieldbus network installed and future plans to install. Foundation Fieldbus HSE devices are in their initial introduction phase, and very few respondents had installed devices that were HSE-compatible. PROFIBUS PA, however, was reported to be installed in a large number of process plants, but most respondents were unsure of their plans to install PROFIBUS PA-compatible devices.



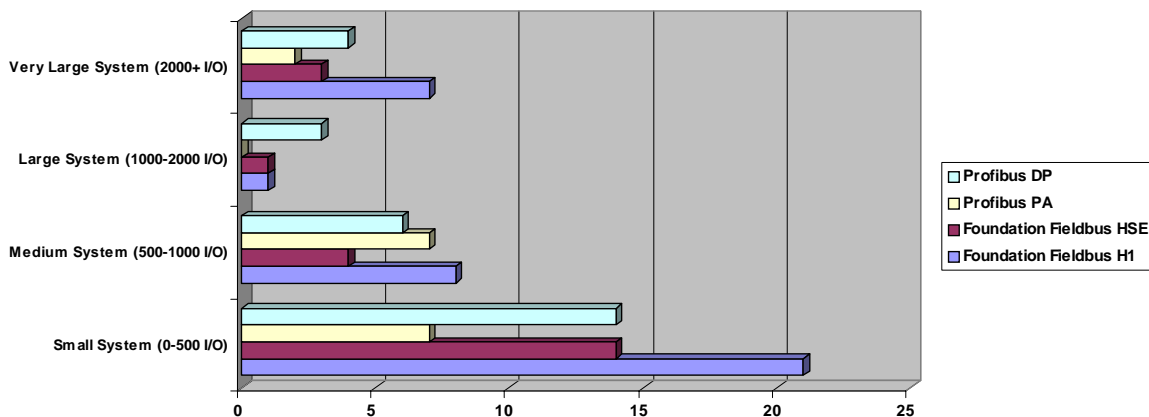
Which Process Fieldbus Networks Have You Installed or Are Planning to Install Over the Next Three Years?

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### Small Systems Dominate

According to the majority of respondents, fieldbus continues to be deployed primarily on smaller size systems. A significant number of respondents, however, are deploying fieldbus on medium and even very large systems consisting of over 2,000 I/O points.

ARC believes that fieldbus is making the transition from the world of small systems and pilot plants to larger, more mission critical applications. Several of the world’s leading refiners, for example, are specifying fieldbus on many greenfield and revamp projects and fieldbus-compatible instruments and systems are already a key selection criterion for users today.



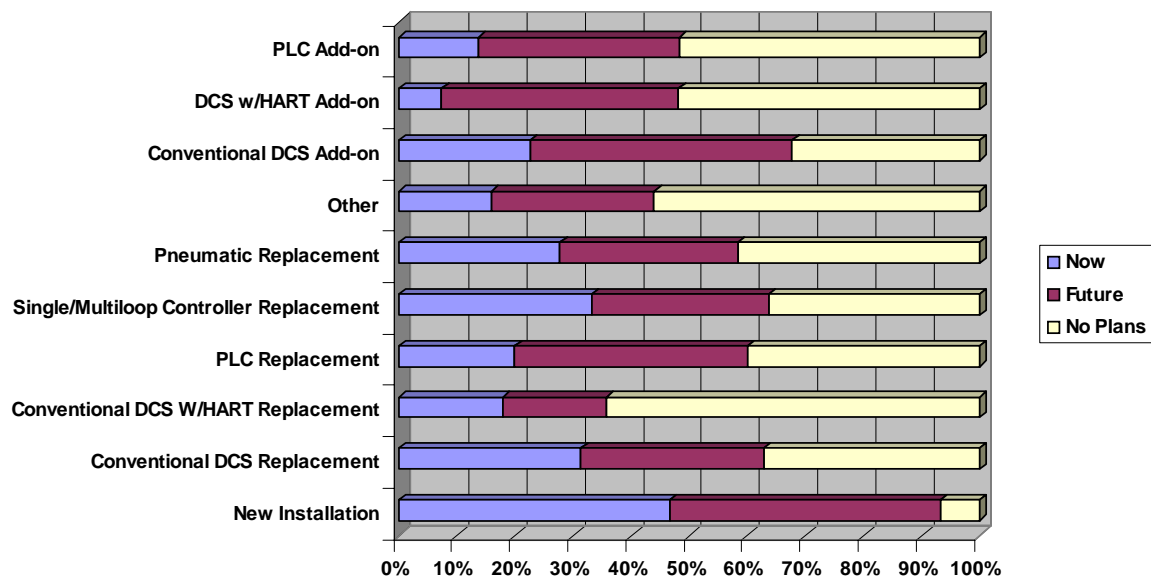
What Size Fieldbus System Are You Planning to Install?

### Mission Critical Apps No Longer a Barrier

Many of our user respondents are deploying fieldbus on mission critical applications and are even specifying fieldbus on an enterprise-wide basis. The majority of respondents indicated that they would install Foundation Fieldbus H1 on all applications, while those who restricted deployment to lab and pilot applications were in the minority. While it will probably be some time before we see true deployment of fieldbus on an enterprise-wide basis, these results are encouraging and show the increased penetration of both PROFIBus and Foundation Fieldbus in all facets of automation, not just noncritical or ancillary processes.

### New Installations vs. Add-Ons, Replacements

It has always been difficult to articulate a value proposition for the installation of fieldbus in existing plants. Although existing installations can benefit greatly from the improved asset management capabilities and performance afforded by fieldbus, installation on new facilities and expansions has always been more prevalent. This is reflected in our survey responses, where over 90 percent of survey respondents stated that they already have fieldbus deployed in new installations or as part of their future plans. Fieldbus also scored high in replacement of single and multiloop controller-based systems, conventional DCS replacement, and pneumatic system replacement. Areas where fieldbus is least likely to be deployed include PLC add-ons, conventional DCS with HART replacement, and conventional



Is Your Current or Future Fieldbus Installation a New Installation, an Add-On, or a Replacement Installation?

DCS with HART add-ons. Most of the major automation system suppliers now offers DCSs with HART I/O, allowing users to get enhanced benefits out of their already large installed base of HART instrumentation.

The complete results of this survey can be viewed at: [http://www.arcweb.com/surveys/Fieldbususer/Fieldbususer\\_files/frame.htm](http://www.arcweb.com/surveys/Fieldbususer/Fieldbususer_files/frame.htm)

## Recommendations

- Users should incorporate fieldbus compatibility and functionality into their control system and instrumentation purchasing criteria. Fieldbus is already part of the purchase specification for instruments and systems of many leading process manufacturers.
- Users should consider deployment of fieldbus technology in critical processes and for larger size systems. Fieldbus need no longer be limited to pilot plants or ancillary applications.
- While fieldbus remains predominant in new installations, many users underestimate the value the fieldbus can bring to existing installations or as a conventional system replacement. Fieldbus technology should be considered as a replacement for older pneumatic and single/multiloop controller-based installations.
- New control systems can take advantage of the existing installed base of HART field devices while also incorporating Foundation fieldbus functionality. Users should consider these systems as a cost-effective method for fieldbus migration.

*Please help us improve our deliverables to you – take our survey linked to this transmittal e-mail or at [www.arcweb.com/myarc](http://www.arcweb.com/myarc) in the Client Area. For further information, contact your account manager or the author at [lobrien@arcweb.com](mailto:lobrien@arcweb.com). Recommended circulation: All MAS-P & MAS-H clients. ARC Insights are published and copyrighted by ARC Advisory Group. The information is proprietary to ARC and no part of it may be reproduced without prior permission from ARC.*