

Digital Advanced Rural Testbed (DART)

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ABSTRACT

This poster presents the Digital Advanced Rural Testbed (DART), which aims to facilitate the digital inclusion of creative industries in these communities, the creation of new business models and the provision of healthcare through advanced satellite enablers.

Categories and Subject Descriptors

J.2 [Computer Applications]: Physical Sciences and Engineering – electronics, engineering.

General Terms

Measurement, Performance, Design, Experimentation, Standardization.

Keywords

Satellite broadband, digital inclusion, testbed.

1. INTRODUCTION

DART [1] is an experimental advanced network using satellite broadband to facilitate open and flexible experimentation with new business models, applications and advanced services to remote and rural communities. DART is one of five Network Service Demonstrators funded by the UK Technology Strategy Board (TSB).

2. OBJECTIVES

- To build a testbed supporting advanced infrastructure and key technology enablers.
- To support experimentation with new business models for Next Generation Access.
- To allow third parties (e.g., content providers) to experiment with new network infrastructure and service enablers.
- To pilot digital content and new applications with users in remote and rural communities.

DART will allow network operators, application developers and content providers to answer questions such as:

- How can I watch high-quality on-demand and online TV services using satellite broadband?
- I have broadband at home and I need to use e-healthcare, who pays for the extra cost?
- How do I create digital audio-visual content and make it accessible to everyone?

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- I have developed a new application, how do I test it with rural users?

3. TECHNOLOGY ENABLERS

The TSB has identified a set of technology enablers that may be introduced in Next Generation Networks. DART will implement four of these enablers to create new advanced services and business models using the network infrastructure of Hylas I satellite operated by Avanti .

Table 1. DART technology enablers

Enabler	Features
Multicast	Distribution of data to multiple receivers.
Caching of multimedia content	High-speed access to online video content.
Dynamic variation of QoS/bandwidth	On-demand QoS parameters/bandwidth
Micropayments	On-demand QoS parameters/bandwidth

4. TESTBED ARCHITECTURE

DART will build a community of over 200 users spread across the UK, including a mixture of business, home, and community access. The community network in Wray, Lancashire, provides a unique opportunity to efficiently deliver video caching services using a combination of satellite, wireless and fibre networks. Use of DART will be managed by IC tomorrow (ictomorrow.co.uk). This platform is open to consumers wishing to participate or businesses offering digital products, allowing them to experience new digital broadband applications.

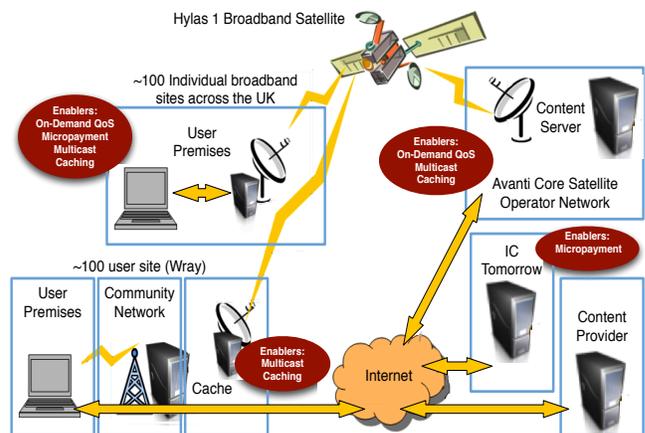


Figure 1. DART architecture.

5. CONCLUSIONS

DART allows application and content providers to experiment with innovative network technologies. This will enable an operator to tailor and sell services/products in a different manner than just delivering simple broadband connections. The experience gained will stimulate deployment of Next Generation Networks and the applications that will be implemented.

6. ACKNOWLEDGMENTS

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7. REFERENCES

- [1] <http://www.dotrural.ac.uk/dart/>
- [2] <http://www.avantiplc.com/satellite-fleet/hylas-1>