

## The merger between HGF & HomePNA - FAQ

### ➤ Why did we merge?

#### Overall Message:

Both organizations had a lot in common; each one focused on Service Providers, advanced wired home networking, and high quality services delivery. Their joint vision was that G.hn will become the backbone network throughout the home with wireless access points to support nomadic devices and with bridges to low bit rate networks such as Bluetooth, ZigBee, Z-Wave, and Narrowband PLC to support Smart Home applications and the Internet of Things.

### ➤ What should the market expect to see right away?

- Continued support for HPNA on certifying systems and promoting the technology while we communicate the migration path to G.hn
- Growing support and demand for G.hn certified systems and deployments

### ➤ Where will HomeGrid be in a year?

With system vendors completing designs and HGF opening up its G.hn accredited lab to test systems, we expect a significant number of certified systems well before the end of this year. At this time, HGF will be fostering a rapidly growing G.hn market. By the end of 2013, we expect to have announced several key retail products as well as various Service Provider trials and deployments using certified G.hn systems. For HomePNA there are already many system companies with dozens of certified systems available. These will continue to be used to address today's pressing networking requirements. Full HGF support is behind HomePNA technology.

### ➤ What about HomePNA technology, where will it be in a year?

The number of HomePNA nodes deployed will continue to grow and new systems will be certified under the current HomePNA logo. The marketing arm of HGF will include coverage of the HomePNA message and the technical community will work to incorporate appropriate HomePNA technology improvements.

### ➤ How will HomePNA systems be certified going forward?

Certification will continue as before but now will be done through HomeGrid. The HomePNA Alliance has typically held two to three certification events per year. HGF will hold at least two HomePNA certification events over the coming twelve months. HGF plans to continue to certify HomePNA products for as long as there is an active market and members have new products to certify.

### ➤ How will these technologies converge in the market?

#### Convergence:

The merged organization has a HomePNA to G.hn migration path, which makes sense both technically and commercially. G.hn and HomePNA can coexist on the same wires, and with dual mode chips being pioneered by a HomeGrid member (see the HomeGrid Convergence paper) Service Providers have the option to start their migration to G.hn with systems that meet their needs today while building for the future. G.hn can operate concurrently over the same wires as HomePNA by virtue of the G.hn network operating at higher frequencies; i.e. above HomePNA. This list of options for Service Providers will enable them to transition their base to G.hn smoothly according to their needs and plans, while extending the life of their HomePNA deployments, extending their return on investment (ROI).

➤ **How did the HomePNA and HomeGrid leadership manage the merger?**

In Spring 2012, a team made up of officers from each organization was established to manage the merger. The goal was to have a smooth transition for both organizations into a single one, while maintaining the strengths of each. As mergers go, it was a relatively easy procedure, with the unanimous approval of both boards. This was greatly helped by the clear synergies between the two organizations.

➤ **What is the shape of the resulting organization?**

HomeGrid Forum now has over 70 members. Our Board of Directors includes major Service Providers, a leading representative of the retail and Consumer Electronics market (Best Buy), some of the world's largest system companies, and world leading silicon companies. The post-merger Board simply combines the two pre-merger Boards.

AT&T and Sigma Designs sat on both Boards, and bring a sense of common purpose and knowledge of both technologies to the merged Board. Arris (through its acquisition of Motorola Home Network) has been a long-term HomePNA Board member and a very active Promoter member of HGF. Cisco comes from HomePNA and brings its broad view of markets and technology. The other HomeGrid pre-merger members - BT, Best Buy, Intel, Marvell, and Telefonica - have all agreed to serve on the new board.

➤ **What are HGF's focus areas?**

**Focus:**

HomeGrid had three focus areas pre-merger. These will continue after the merger but will be expanded to include HomePNA technology.

1. Actively promote G.hn and HomePNA in the global market. Provide a clear vision with a set of tools to assist the market in its migration from legacy technologies to G.hn. Provide a means for members to exchange "best practices" on the deployment of both HomePNA and G.hn.
2. Provide a comprehensive test and certification environment for G.hn and HomePNA silicon and systems.
3. Develop the technologies further to ensure they continue to meet the needs of the evolving market. As HomePNA is already a mature technology, less development is expected. There is a need, however, to add selected enhancements (such as support for the IEEE 1905.1 heterogeneous network management schemes) to HomePNA devices.

➤ **What synergies come about from the merge?**

**Organizations:**

By merging with HomePNA, HGF also gains a group experienced and well regarded for its approach to addressing the needs of Service Providers in a timely and complete fashion, which has always been a major goal of HGF.

**Technologies:**

While the two technologies operate over some of the same wire types - coax and phoneline/twisted pair - they are not incompatible. G.hn is capable of frequency agility, and can be set to operate *on the same wires* at frequencies above those used by HomePNA. This creates an *overlay network* simultaneously passing data without interfering with the HomePNA network. Further, G.hn also operates powerlines and plastic optical fiber and so can be added to existing HomePNA network installations as *adjunct networks*, perhaps to extend the coverage within a given home. Finally, a dual mode chip, capable of operating in either G.hn or HomePNA mode, allows Service Providers to pick a single product to stock for systems that can either be



added to existing HomePNA networks or used in new G.hn networks. Such dual mode devices could be reconfigured for G.hn operation in the future, if the Service Provider decides to move to an all-G.hn architecture.

**Members:**

The membership of HomeGrid more than doubles with this merger. Many HomePNA members are system companies, which are now either considering or completing G.hn designs. These companies, already planning to join HGF to apply for certification testing, gain from this merger. The Service Providers from HomePNA benefit from the migration planning and education we provide showing how G.hn extends and enhances HomePNA networks, while enabling life cycle extension. Moreover, the membership of HGF gains the knowledge base of best practices HomePNA brings with regard to deploying coax and phonenumber networks.

**The Market:**

The market will also gain from the merger. Through the expanded membership and knowledge base, HomeGrid can better guide Service Providers in their planning and deployments of G.hn while providing a well-defined migration path. There will also be an expanded supply chain.

➤ **What is HomePNA Technology?**

HomePNA is a mature technology that operates over coax and phonelines and has a large and still growing installed base of over 40 million network nodes. With over 85 certified products to select from, HomePNA meets today’s needs of Service Providers in four continents. HomePNA networks are broad and diverse, able to meet the current needs for high rate data and streaming HD IPTV services in any market.

HomePNA technology is defined in a family of ITU-T standards. The ITU-T is the United Nation’s telecom and networking standardization arm, creating standards called “Recommendations.” HomePNA is defined in Recommendation ITU-T G.9951 (phoneline) and Recommendation ITU-T G.9954 (coax).

➤ **What is the HomePNA Alliance?**

The HomePNA Alliance, with over 40 members prior to the merger with HomeGrid Forum, is a mature organization that was formed to develop and promote market acceptance of HomePNA technology, certify and maintain high quality levels for HomePNA products, and provide a means for members to exchange best practices such as ways to maximize network performance.

➤ **What is G.hn Technology?**

G.hn standards were developed by the ITU-T to specify a single technology that operates over any wired medium including existing home infrastructure - powerlines, coaxial cable (baseband and RF modes), and phonelines – as well as purpose-installed wiring such as CAT type LAN cable). The ITU added plastic optical fiber support in Dec. 2012 highlighting our continued efforts to expand the technology to meet market demands. G.hn delivers optimum performance and robustness over all these media types. Five silicon companies are competing to provide G.hn chips and drive innovation. System companies have announced designs and HGF is already aware of 20 different systems. With the imminent announcement that the accredited test house is open for business, should see HGF certified systems very soon. To meet the anticipated high demand for certification testing, we plan to announce additional test houses globally in the near future.

➤ **Where will G.hn be deployed?**

The potential market for G.hn is truly global:

- In North America, Service Providers are pushing hard to get products in their labs and planning in-home testing and trials. They are asking for delivery schedules and volume production. The current focus is on G.hn PLC mode.
- In South America, the interest in G.hn is over all mediums, with some emphasis on coax (there is currently HomePNA activity in the region). We expect that several system vendors will offer multiple technologies to Service Providers.
- In Europe, powerline has the most interest however there is regional interest in G.hn over phoneline/twisted pair and coax.
- In Africa, the market is in its infancy. HGF has been asked to consider ways that G.hn could be used.
- In the Middle East, there are various levels of demand and interest in different mediums.
- In the sub-continent of India and the surrounding countries, there is a growing interest in G.hn over powerlines and coax. HomePNA already has a presence there
- In Asia, we expect a huge pent-up demand for G.hn, not least because of it performs in high-density MDU buildings where networks are located very close together and can interfere. G.hn is the only technology that can deal with this.

➡ **About HomeGrid Forum:**

HomeGrid Forum was formed to promote G.hn. The initial phase was to contribute to the development of the ITU Standards, and educate the market about the potential of G.hn. More recently, the focus has moved to initial interoperability testing, through to formal certification of both silicon and systems. With the merger, one of the main activities will be explaining the migration path to G.hn to both Service Providers and vendors

We have the resources and capacity to integrate HomePNA into our planning, workflow and actions. The market will see our commitment as we educate and support, test and certify, and improve on HomePNA while maintaining our focus on moving the market to G.hn.